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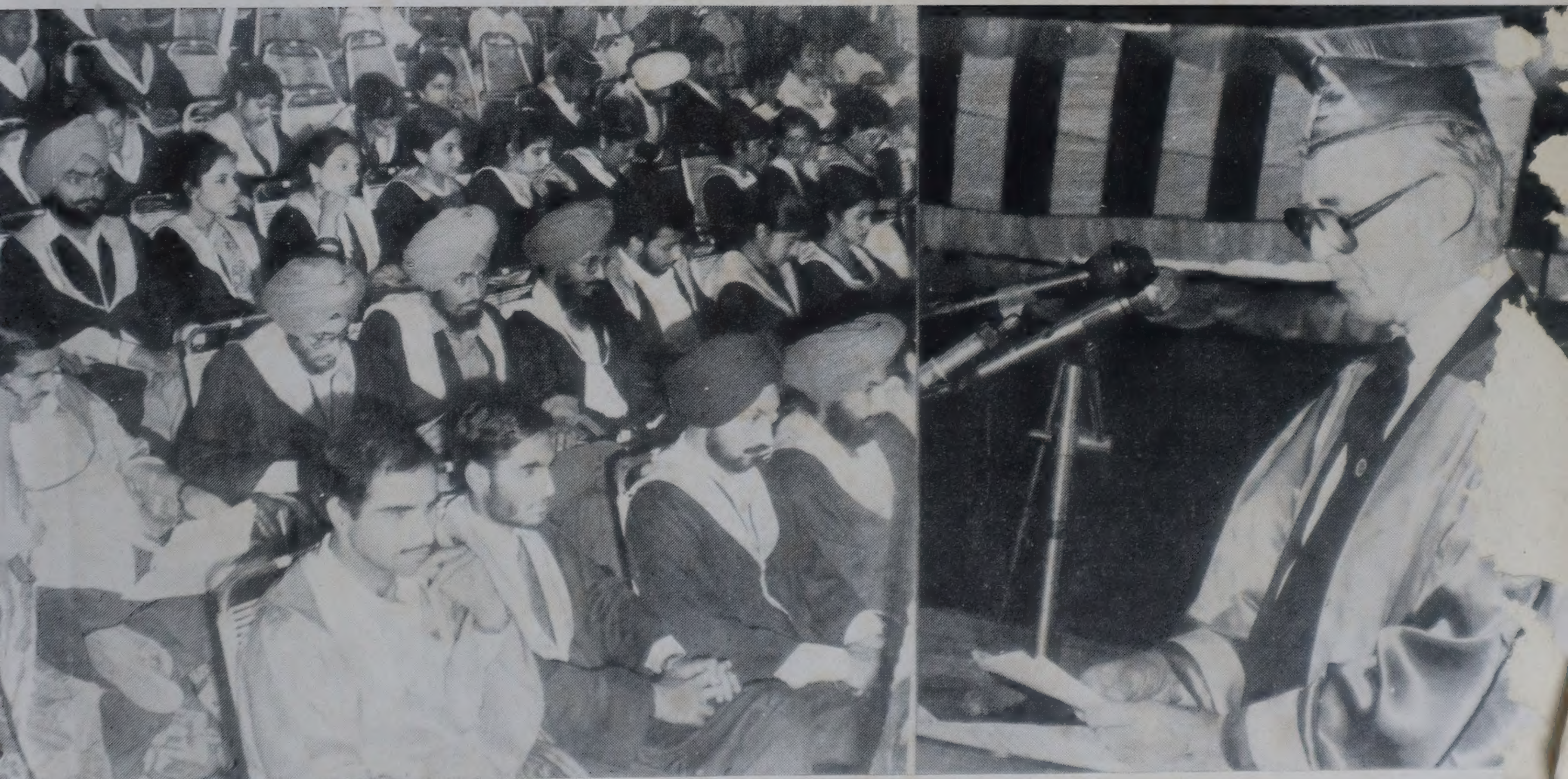
University News

C.F.T.R.I. MYS

MONDAY, JULY 6, 1987

Rs. 1.50

Silver Jubilee Convocation



Dr. Norman E. Borlaug, Emeritus Scientist, International Maize and Wheat Improvement Centre, Mexico, delivering the Convocation Address at the Punjab Agricultural University, Ludhiana.

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C.L. Chadha
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UNIVERSITY NEWS

VOL. XXV JULY 6
No. 27 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor:
SUTINDER SINGH

Bringing Universities and the Villages Closer

Devendra Kumar*

Though more than 3/4th of our population lives in the villages and the basis of progress of culture, civilization and economics depends to a large extent on the rural scene, the education system, more so at the university level, does not make the students know and feel oneness with the toiling rural masses. The new generation needs to be exposed to the rural economy and its problems to be able to bridge the widening gap between the urban and rural economics. It is evident that the nation cannot progress only on one foot i.e. urban, it has to move with both its feet the rural and urban which move forward in unison. Hence the need for rural orientation to our university system.

Existing Rural Programmes

Presently there are certain extra curricular programmes in the universities assisted by the UGC wherein the students do get a chance to go to the villages, e.g. (a) NSS, (b) Adult Education, (c) Population Education, etc. It would be an optimistic estimate that 10 per cent of the total student population gets involved in one or other of the programmes. The rest of the 90 per cent are left out. Even this 10 per cent who are involved in these programmes have only a very superficial contact with the villages, since the programmes themselves need to be given further focus on the life of the poor in the villages. Obviously the first step towards greater university-village association will be through improving and widening these existing programmes.

The second easy area where the university system within its present ambit does deal with the problems of the villages is Research. Such projects, can be progressively increased in both humanities and physical science faculties which deal with the economy of the villages. It is very necessary that the identification of these problems is done carefully. In doing so, the academic community could develop closer association with voluntary institutions which are working in the villages and have been able to establish a rapport with poor of the land. The academics cannot know where the shoe pinches to those 'who wear no shoes'. This association of the university with the field agencies is necessary both from the point of view of finding out areas where researches are essential as well as for taking the results of the researches done to those whom it can benefit. For this it is necessary that mechanism is found out by which the researches undertaken in the university have direct relationship to the requirements of the society.

In the curriculum of the various faculties of the university also there should be areas of interface between what is taught in the class and what is required by the masses. Initially this area will be small but we have to see that all students are able to get a total picture of the countryside. Through their education a commitment should be created amongst the students by which they feel responsibility for weaker sections of the community. This, obviously, is difficult task and various disciplines will have to go deeper into the subject to find out where and how they can

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**Vice-Chancellor, Gandhigram Rural Institute (Deemed University), Gandhigram 624302, Anna Dist., Tamil Nadu.*

attach themselves. All the resources and time that is being utilised by the university system for higher education to the students, who are supposed to play major role in fashioning the future of the country, should be so designed that the learning process leads to development of the individual and at the same time makes them serve the society.

There are today many programmes of imminent national importance such as afforestation, removal of environmental pollution, conservation of limited resources, preservation of endangered species of flora and fauna, replacement of non-renewable sources of energy by renewable sources of energy, education of population control, decreasing the percentage of people living below the line of poverty, etc, etc. These and many more aspects can afford themselves to be woven into the course contents of the syllabi and thus apart from extra curricular activities which connect the university to the villages and the research to the rural problems, there should be a curricular aspect of the course also which brings a student near to the masses. It would not be out of place to mention that the traditional higher education system leads to alienation of the educated from the masses, creates greater class distinctions and helps in increasing the phenomenon of elitism. These trends have got to be arrested if we want to work for a classless society of equals. Higher knowledge and distancing the classes from the masses are not a necessary nexus. This may seem a radical stance but the times demand that the country has the form of education which leads towards social justice along with improving the general quality of the life of the people on the whole.

Networking at State Level

In these circumstances, the universities of a State—as a family of institutions engaged in higher education in the state—should play a dynamic role in the fulfilment of the above tasks. For this purpose the following suggestions are offered for consideration.

(i) Documentation should be made of all such researches done in all the institutions under the universities of the State which have the potentiality of application in the rural field and which potentiality has not been achieved so far. This documentation could be both in the fields of science and technology as well as in social sciences.

(ii) From amongst the available technology, processes or methodologies from the academic field, a choice should be made of the most promising and essential. These be tried out in the field through extension programmes undertaken either by the universities themselves or in conjunction with the governmental/non-governmental agencies working in the field.

(iii) The various departments of the government, implementing various developmental programmes for the villages, come across problems of technical as well as of managerial nature which require solutions. There should be a method by which the universities being the Brain Trust of the State could act in helping to solve these problems and offer alternative systems and model which could be tried out by the government. The universities are to be made participants in the development strategy of the State especially the areas that touch the rural economy.

(iv) There could be evolved State Level Coordinated Projects on the lines of A.I.C.P for the solution of some of the basic problems. In these multidisciplinal projects more than one university could be asked to work after dividing the problems into various phases and farming out the same to different universities.

(v) The State Government should come forward with an innovative plan by which people engaged in rural studies and researches could be exchanged from one university to another for schort periods of time so as to create a new climate and culture for rural development through increased mutuality in the university system.

(vi) Since the non-governmental agencies are in a little better position to experiment upon innovative designs and management practices in the programmes of the government for taking benefits to the rural poor as well as programmes of national development requiring people's participation, some of these programmes should be tried out under the aegis of the universities. A method could be thought out by which some of the governmental programmes which are in consonance with the projects and extension programmes in the particular university (and for which the university may be prepared to come forward

(*Continued on page 18*)

UNIT
AUG
C. F. T. R. I.,

THE SAGA OF GREEN REVOLUTION

Noble Peace Prize Winner, Dr. Norman E. Borlaug, Emeritus Scientist, International Maize and Wheat Improvement Centre, Mexico and popularly known the world over as the 'Father of Green Revolution,' participated in the Silver Jubilee Celebrations of the Punjab Agricultural University and addressed its Convocation. In his address Dr. Borlaug narrated the story of the genesis and growth of the Green Revolution. We are pleased to carry the full text of this highly perceptive address.

It is a very special privilege for me to participate in this Convocation—and Silver Jubilee—paying well deserved tribute to the Punjab Agricultural University and its staff and alumni on this happy occasion. It is appropriate on such an occasion that we pause and reflect on the many achievements of your great university from the time of inception up to the present before turning our attention to the challenges of the future.

The Punjab Agricultural University (PAU) has played a vital multifaced role in education, research and extension over the past quarter of a century. It has increased knowledge which in turn has resulted in the development of improved technology and through its application has increased the income and improved the standard of living of untold millions of people in this province, throughout India and in many other countries of the world.

Although the Punjab Agricultural University has made many important contributions to other spheres of human progress, it appears to me, that its greatest contribution, without doubt, has been in the field of agriculture and food production. You have triggered a Green Revolution in food production and blazed a trial for other food deficit provinces and nations to follow. Consequently, I will largely confine my remarks to the contributions of Punjab Agricultural University and the farmers of the Punjab to the agricultural revolution—especially to the wheat and rice revolutions—which were spawned here in the mid-1960's and, subsequently, spread rapidly to other areas and became known worldwide as the Green Revolution. The Green Revolution displayed; (1) despair with hope, (2) food shortages with over-flowing granaries, and (3) famine with food abundance. In the process, it disapproved the hypothesis and computer models of doom-sayers, such as the Erlichs the Paddocks and the Club of Rome, who predicted disastrous famines for India, Pakistan, Indonesia and China in the 1970's and/or 1980. Instead wheat production in the developing countries has increased by 150 per cent since the early 1960's. Rice production has also increased spectacularly. As a result, many of the developing countries that were suffering from extreme shortages of cereals two decades ago are now confronted with "surplus" grain stocks. In a large part these are "apparent" "surpluses", rather than "real surpluses" because of poverty and lack of purchasing power among a large low income sector of the population. For some of these countries the most important short term aspect of the food problem is now more equitable distribution rather than continued emphasis on production. While most Asian and many Latin American countries have spectacularly increased food production during the past two decades, virtually all African countries have experienced progressively falling per capita production resulting from the interaction of stagnant agricultural production and explosive population growth. This must be corrected by revolutionizing sorghum, millet and maize production during the next decade. I personally believe the technology is available to permit this to achieve. What is needed are a few charismatic "scientific integrators across disciplines" to properly assemble the package of improved technology, test and demonstrate its value widely on farmers' fields and at the proper time "marry" it to an economic government policy that will stimulate and permit its adoption by many farmers. It will not happen automatically it must be made to happen—by the application of aggressive leadership at both the scientific and political levels.

The Quiet Revolution in Mexican Wheat Production and the Indirect Role in the Green Revolution

I made my first visit to India in 1960. Since 1963 I have had the stimulating experience of visiting your country once or twice each year to collaborate in a minor way with your wheat scientists in their struggle to revolutionize Indian wheat production. I have had the gratifying experience of seeing the Green Revolution in Indian wheat and rice production burst forth into bountiful golden harvest—that far exceeded my fondest dreams.

In the early years of Indian wheat revolution (1965 and 1966) large quantities of seed of the dwarf Mexican varieties Sonora 64 and Lerma Rojo 64 were imported from Mexico and grown with outstanding success. The large importation was made only after four years of widespread testing on hundreds of Indian farms. It was not recklessly playing with the lives of millions of innocent peasant farmers as was claimed by a number of highly respected American and European scientists. They were convinced, the Mexican varieties were certain to be poorly adapted to Indian climatic and soil conditions and moreover were almost certain to be vulnerable to rust epidemics.

The results were spectacularly successful despite the dire predictions. But why and how did this happen. The answer becomes self-evident from a brief historical review of the way the Mexican wheat research programme was organised as is briefly summarized below:

The First Foreign Technical Agricultural Assistance Program

For the past 43 years, I have been privileged to participate in foreign technical assistance programs designed to help increase food production in more than 40 developing nations. This unique experience has involved working on food problems with : (1) governments covering the entire spectrum of political ideologies; (2) many different racial, cultural, ethnic and linguistic groups; and (3) a wide range of religious groups. I have found that my involvement in the struggle to produce bread for the hungry has been an acceptable and effective passport to understanding with all of these diverse groups. As a result of these experiences, I have seen some dramatic changes in yield and production of a few crops—especially wheat—in a number of countries. I take this opportunity to sketch how some of these changes were achieved and what factors had to be manipulated in order to increase yield and production.

The success story of the Cooperative Mexican Agricultural Program is now well known. This program was undertaken jointly by the Mexican Ministry of Agriculture and the Rockefeller Foundation in 1943, and represented the first cooperative attempt by a philanthropic organization and a foreign government to assist a developing nation to improve its agriculture.

The original directive in establishing the Cooperative Mexican Program was : (1) to develop a research program to produce technology capable of increasing the yield and production of basic food crops such as corn, wheat and beans (later other crops were added); (2) to develop a modest network of agricultural experiment stations on which to conduct the research, (although at the outset it was agreed that much of the research should be done on farmers' fields); (3) to train a corps of young Mexican agricultural scientists in all of the disciplines that influence crop production--genetics and plant breeding, soil fertility and agronomy, irrigation, weed control, plant pathology and entomology (agricultural economics and cereal technology were added later); (4) to formulate a package of improved agronomic production practices based upon the research results, and transfer them to farmers' fields to increase production as soon as possible; and (5) to work "ourselves" out of the job as soon as possible, by transferring the responsibilities for continuation of the program to the corps of trained young Mexican scientists, as soon as sufficient numbers had been trained and acquired sufficient experience to effectively carry out the program.

In the state of Sonora, in 1941—just three years before the Cooperative Agricultural Program was initiated—there had been three successive years in which most of the commercial wheat crop had been destroyed by stem rusts. Wheat farmers who had suffered severe economic losses were disillusioned, disgruntled and openly hostile to agricultural scientists, because of the scientists' ineffectiveness in developing rust-resistant varieties. The psychological environment in which we began the breeding program, consequently, was very grim.

Many challenges were met and overcome in the intervening years, but the ultimate success of the program is unquestioned. In 1945, Mexican wheat yields were low and stagnant at 750 kilograms per hectare. Production was merely 365,000 metric tons, only 40 percent of consumption. By the early 1950s, the impact of research and its application on yield and production was becoming evident. This resulted from the development of a package of improved technology and its rapid and widespread transfer to farmers' fields under the incentive of stimulatory economic government policy. By 1956, yields compared to the 1945 base period had increased 83 per cent to a level of 1370 kilograms per hectare, whereas production had risen from 365,000 to 1,250,000 tons and Mexico had achieved self-sufficiency in wheat production. Both wheat yields and production have continued to increase dramatically in Mexico. The 1985 national average yield reached 45000 kilograms per hectare, and production was 5,200,000 tons (Figures 1 and 2). Now, in favourable years the better farmers harvest 6.5 to 7.0 tons per hectare compared to 2.0 tons in 1945.

Impact of Improved Technology on Mexican Wheat Production

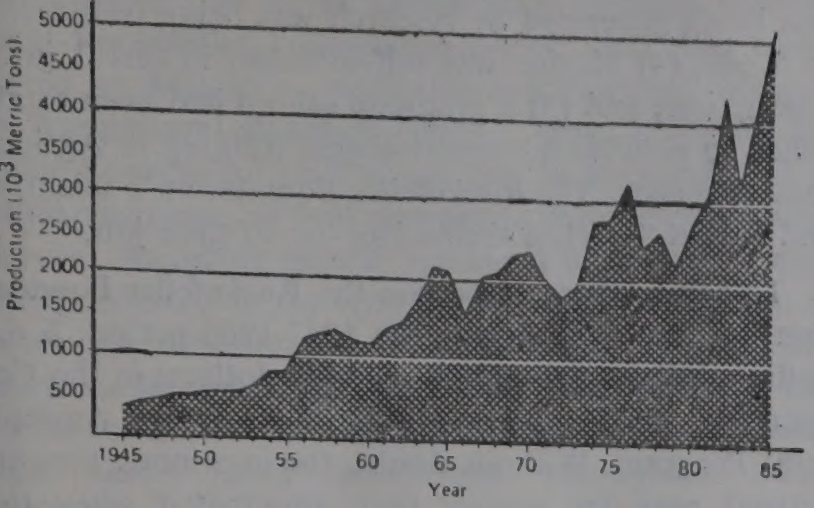

Fig. 1

Impact of Improved Technology on Mexican Wheat Yield

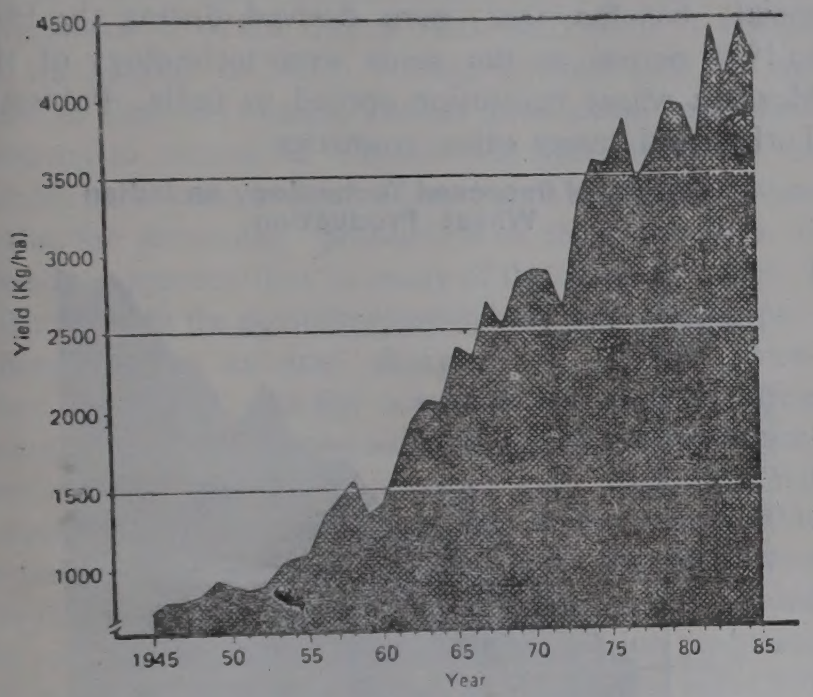

Fig. 2

The important point to be emphasized from this experience is that the dramatic yield and production increases were the result of the development and widespread use of a package of appropriate technology. The package not only provided early maturing, high-yielding, broadly adapted varieties that were disease and lodging resistant (dwarf), but those that were also more efficient in the utilization of both fertilizer and moisture, and that generally responded more favourably to better husbandry. Government economic policies were modified to provide incentives which encouraged rapid and enthusiastic adoption of the technology by farmers.

The unique, broad adaptation of the Mexican wheat varieties resulted from the, then, unorthodox *shuttle breeding* method that was employed in their development. It was a method derived out of necessity to rapidly develop rust-resistant varieties of wheat, yet was to have an unimaginably profound international impact many years later.

With the breeding program methods then in use everywhere in the world, only one segregating generation of breeding materials was grown each year. The breeding dogma of the era dictated that this was necessary in order to assure adaptation and success of a new variety, since there had to be a good fit between genotype and the environment; this implied that the segregating populations had to be grown and the individual plant selections made during the season and in the soil and climate where the variety was to be grown commercially. Consequently, only one generation could be grown and selected each year, which meant that it took a minimum of 10 years to select and evaluate rust-resistant varieties for yield, disease resistance, and milling and baking quality, and to begin to multiply their seed for release to farmers. Little or nothing was then known about the importance of photoperiodism in the adaptation of wheat and other cereal crop varieties.

Recognizing the frequency and destructiveness of recent stem rust epidemics to both farmers and wheat breeders, it was decided that it was essential to cut in half the number of years required to breed a new, improved variety. This theoretically was possible by locating two contrasting environments where temperatures were favourable for the development of wheat plants in different seasons of the year, so that two growing seasons could be used per year. This was achieved by first planting in early November on the coastal plain of Sonora (at an elevation of 39 metres and 29°N latitude), when the days were getting shorter. Artificial epidemics of stem and leaf rust were generated, and the best plants with adequate rust resistance were selected in April; those with good plump seed were shuttled to Toluca Valley, about 700 miles to the south (at 19°N latitude and at an elevation of 2650 meters), where they were planted in early May when day length was increasing. At this elevation, temperatures are ideal for the development of the wheat plant during the summer season; moreover, frequent rains foster the development of heavy epidemics of strip, leaf rust and Septoria leaf blight. In October, the best disease-resistant plants were selected, and those with good plump grain were shuttled back to Sonora for planting in November. Employing this shuttle breeding method for handling segregating populations, the first stem rust resistant varieties were produced in four years and were growing in farmers' fields in the fifth year, rather than requiring 10 years with conventional orthodox methods of the era (Fig. 3).

SHUTTLE BREEDING : Produced the Widely Adapted Rust Resistant Semi-Dwarf Mexican Wheats that Catalyzed the Green Revolution

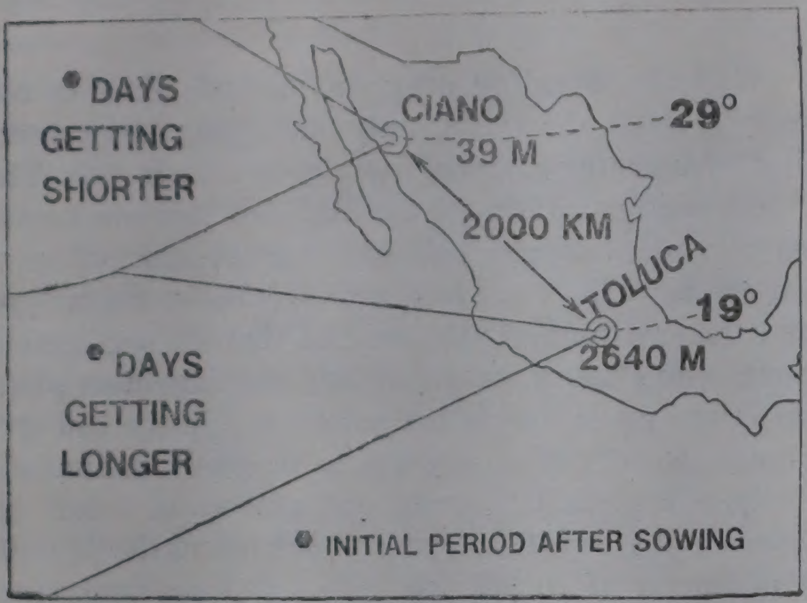

Fig 3

The broad adaptation of the new varieties simplified the seed multiplication and distribution problem in Mexico, a mountainous country where the crop is grown under a wide range of planting, dates, latitude, elevations and soil types. Many years later the importance of this unique breadth of adaptation permitted the Mexican varieties (after adequate testing) to be successfully grown commercially in many other spring wheat regions of Asia, Africa, Europe, South America, North America and Australia. Most important of all, the Cooperative Mexican Program developed and left in place a well-trained cadre of national scientists to continue the task.

By the late 1950s, it was evident that the food situation in Asia was becoming more and more critical. Anticipating a forthcoming crisis in the 1960s. Dr. J.G. Harrar, then Director (later President) of Agricultural Sciences of the Rockefeller Foundation, and Dr. F.F. Hill, Vice-President of the Ford Foundation, took the initiative to establish the first truely International Agricultural Research Institute. This institute, the International Rice Research Institute (IRRI), was established in collaboration with the Philippine government and began to function in 1962. The Mexican wheat research program was used as a model for establishing this institute. Today there are 13 such international institutes in the world, including the one in Mexico.

The Rockefeller Foundation Agricultural Program completes its Mission in Mexico.

By 1960, the Rockefeller Foundation had completed its mission in Mexico with the following results: (1) more than 700 scientists and technicians had been trained, (2) the research program was well organized and functioning smoothly, (3) the technology that was being generated by research was being transferred to farms, (4) Mexico was self-sufficient in cereal grain production; and (5) a graduate school had been established to provide advanced degree training in Agricultural Sciences. The Rockefeller Foundation's scientists had indeed "worked themselves out of their job."

To achive these objectives the Rockefeller Foundation had invested, during the 1943-1960 period, $ 6.1 million dollars ($23 million in 1985 dollars) in the Cooperative Mexican-Rockefeller Foundation Agricultural Program. Without doubt, the enormous benefits derived were far greater than anticipated when the program was initiated. Even more amazing were the immense unanticipated, indirect economies and social benefits that were derived during the 1965 to 1975 period as the seeds and technology of the Mexican wheat revolution spread to India, Pakistan. Turkey and many other countries.

Impact of Improved Technology on Indian Wheat Production

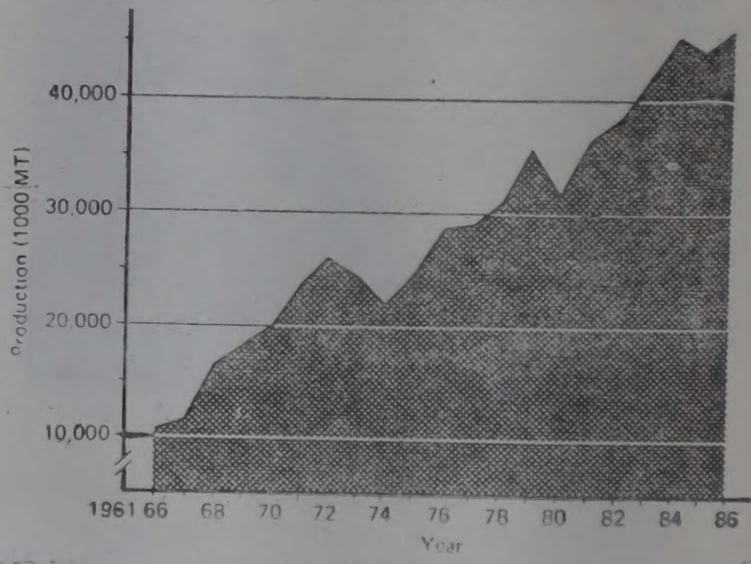

Fig. 4

Impact of Improved Technology on Indian Wheat Gross National Product

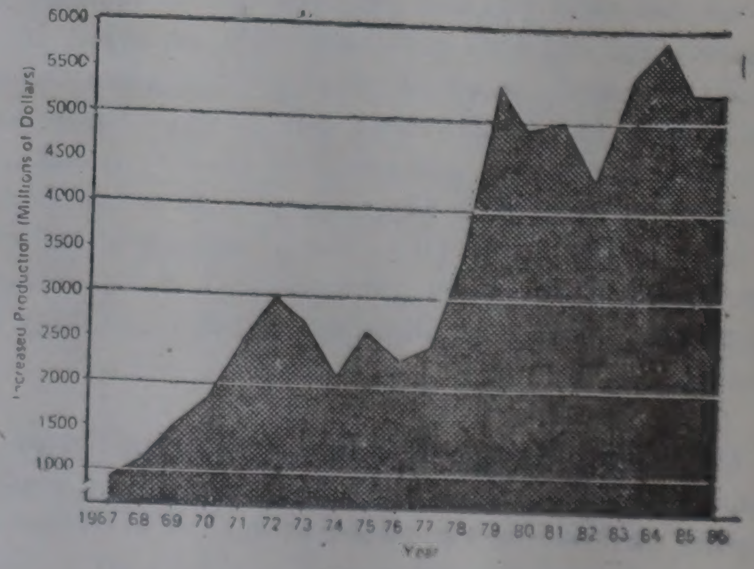

Fig. 5

The research program and the team of young Mexican scientists trained in the Cooperative Mexican Government-Rockefeller Foundation project were then transferred to Mexico's newly-formed National Institute of Agricultural Research (INIA). Most of the Rockefeller Foundation staff either had been transferred to other programs or had returned to their home country. Several, including myself, remained in Mexico temporarily to assist in the transfer of responsibility and to serve as consultants to the new organization. Visits made to several South American countries in the late 1950s confirmed that Mexican wheats were performing well under many conditions throughout Latin America.

During 1960, under the joint sponsorship of the Rockefeller Foundation and the Food and Agriculture Organization of the United Nations (FAO), I visited all the nations of North Africa, the Near East and the Middle East to observe wheat production problems and try to determine whether the Mexican wheat research experience and genetic materials might be of some value for increasing production in those countries. It became apparent that in many of the countries that I visited—with the possible exceptions of India and Egypt—there was an extreme shortage of trained scientists. Moreover, the few scientists that were available were generally ineffective because of poor research orientation and inadequate financial and organizational support. In India and Egypt, there were a considerable number of well-trained scientists; however, many were working on theoretical problems only remotely related to solving their country's wheat production problems. Nonetheless, almost everywhere I visited, and especially in India, Pakistan and Egypt, I thought I saw opportunities to effectively utilize the Mexican wheat varieties and research experience to increase production. At the end of the trip, I recommended that FAO and the Rockefeller Foundation jointly sponsor a scholarship program to train young North African and Near and Middle Eastern scientists in Mexico, under my supervision. As part of the proposal, I also suggested that we organize a cooperative Near and Middle East-Mexican Spring Wheat Yield Nursery to be grown in a number of locations in all of the Near and Middle East and North African countries, as well as in Mexico. The nursery was to include the principal commercial varieties from each country in the region, as well as the best commercial Mexican varieties and the most promising Mexican experimental lines. It was to be prepared in Mexico as a training exercise under my supervision. The proposal was accepted and the first group of trainees came to Mexico in the fall of 1960.

Little did I imagine then that the establishment of this interdiscipline ((“hands-on” intern) training and nursery project would have a tremendous impact on wheat production in a number of Near and Middle East countries within the next seven years. In 1966, this nursery was expanded and became the International Spring Wheat Yield Nursery. For the last two decades it has been operated each year by cooperators in more than 75 locations around the world. It has provided a wealth of useful information on the adaptation of wheat varieties and new experimental lines to different soils and climates, and on their reactions to diseases and insect pests. It has also served as a vehicle for distributing new germplasm to cooperators everywhere. Most important of all, however, it has become an effective scientific bond of understanding and friendship that has linked more together wheat scientists around the world.

Additional Adults Provided with 65% of Daily Calories as a result of Increased Indian Rice Productivity

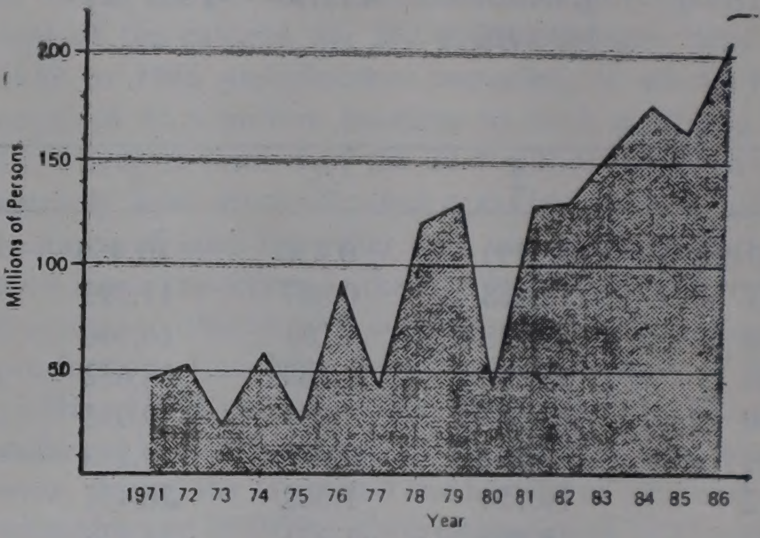

Fig. 6

The first group of young trainees arrived in Mexico in 1961, in time to be infected by the euphoria of the high-yielding Mexican semi-dwarf wheats, which were then in the final stages of evaluation on farms. When they returned to their countries, they took with them many small samples of experimental lines of the dwarf Mexican wheats.

Three years later, I was invited by the Government of India, whose scientists had not participated in the training or in the cooperative nursery program in Mexico, to visit their wheat research program. By then, the euphoria connected with the dwarf Mexican wheat varieties had spread to many countries. Dr. M.S. Swaminathan, then a young Indian wheat scientist (now the Director of IRRI), had obtained seed of five of the early dwarf Mexican wheat lines through an international wheat disease nursery and was fascinated by their appearance. He asked me during my visit, whether or not I thought they had any potential value for increasing Indian wheat production. I refused to make a judgement on the basis of the performance of those five inferior obsolete lines. I told him that I would withhold a decision until I had visited Pakistan and Egypt, en route back to Mexico, to see how the Mexican semi-dwarf wheats were performing there, since I knew that trainees from these two countries, who had been in Mexico, had taken back with them many advanced experimental lines.

En route to Mexico, I was invited by the Director of Research, senior wheat scientists and the Minister of Agriculture of Pakistan to review their wheat breeding nursery at Lyallpur (now Faisalabad). Trailing along in the background were the two young Pakistani scientists who had been in the training program in Mexico. I was disappointed to see the performance of the Mexican dwarf wheats in the demonstration plots. They were inferior to the Pakistani wheats under the conditions of the tests. However, I could see that the wheats had

TABLE 1. **The Impact of Improved Technology on Indian Wheat Yield, Production and Land use before and after the Wheat Revolution.**

Year (*Harvest*)	*Area Harvested* 1000 *Ha*	*Yield MT/Ha*	*Production* 1000 *MT*	*Gross value of increased production* (*Million $*) (**)/*Ha*	*Adults provided with carbohydrate needs by increased wheat* (*Millions of persons*) (***)*over* 1961-66 *period*	*Area required to produce crop at* 1961-66 *yield* 1000 *Ha*	*Area saved by yield increased over* 1961-66 *base* 1000 *Ha*
1	2	3	4	5	6	7	8
1961-66(*)	13,191	0.830	10,950	—	—	—	—
1967	12,838	0.887	11,393	88	3.2	13,726	.888
1968	14,998	1.103	16,540	1,118	41.2	19,928	4,928
1969	15,958	1.169	18,652	1,540	56.3	22,472	6,613
1970	16,626	1.209	20,093	1,828	66.7	24,208	7,582
1971	18,241	1.307	23,833	2,576	94.1	28,714	10,472
1972	19,154	1.382	26,471	3,092	113.3	31,893	12,738
1973	19,461	1.271	24,735	2,758	100.7	29,801	10,339
1974	18,583	1.172	21,778	2,1166	79.1	26,238	7,655
1975	18,111	1.338	24,235	2,630	97.1	29,198	11,087
1976	20,458	1.310	28,846	2,381	130.7	34,754	14,295
1977	20,966	1.387	29,080	2,446	132.4	35,036	14,069
1978	20,946	1.480	31,000	3,493	146.5	37,349	16,402
1979	22,560	1.574	35,510	5,403	179.4	42,783	20,222
1980	21,962	1.437	31,560	4,923	150.6	38,024	16,061
1981	22,104	1.649	36,500	4,987	186.7	43,976	21,872
1982	22,308	1.696	37,833	4,358	196.4	45,582	23,274
1983	23,567	1.816	42,790	5,421	232.6	51,554	27,987
1984	24,700	1.842	45,500	5,911	252.4	54,390	29,995
1985	23,100	1.909	44,100	5,307	242.2	53,132	30,032
1986	23,100	2.030	46,900	5,209	262.6	56,506	33,406

*Average for the six-year period 1961-66.

**Gross value of increased production over 1961-66 base period; wheat value calcuated at US $200/ Metric ton similar to landed value of imported wheat in India from 1967-75 period, from 1976 to 1986 based on actual prices CFI India.

***Calculation based on providing 375 g wheat day or 65% of carbohydrate portion of a 2350 KCal/ day diet.

Source of Data : Ministry of Agriculture of India.

not been properly fertilized or irrigated, although the senior wheat scientists assured me that the methods that had been used in growing the demonstrations were optimum for Pakistan conditions. I stayed at the guest house on the research station that night and was scheduled to leave the next morning at ten o'clock. At daylight, I was awakened by the two young wheat scientists, who said they had something to show me. We walked to a remote corner of the research stations and there I saw four superb plots of Mexican semi dwarf wheats, growing as beautifully as in their native home in the Yaqui Valley halfway around the world. When I asked why they had not used those same agronomic practices to grow the Mexican dwarfs in the main demonstration plots we had seen the day before, I was informed that they were prevented from doing so by the senior scientists. It was then I learnt that when one researches the grade of senior scientist in a government organization in a densely populated developing country, where jockeying for position is vicious, one prefers the condition of "status quo" (the known), a rather than risk "change" (the unknown). This ultra-conservative conduct is rationalized, and seemingly accepted by governments, even though yields and production are low and stagnant, per capita food production is falling and it should appear obvious that the battle on the food production front is being lost to the human population monster. The visit to Egypt revealed the same state of affairs.

After returning to Mexico, I wrote a report to the Government of India informing them that the Mexican semi-dwarfs could indeed play an important role in increasing wheat production in both India and Pakistan. Within a few weeks, many additional small experimental samples of Mexican wheats were sent to both Pakistan and India and the race was soon on between scientists in the two countries to find out whether Mexican wheat varieties could contribute to increasing food production in their respective countries. From the fall of 1963 upto the present the PAU teams of wheat and rice scientists, extension workers, university and State officials have assisted the Punjab farmers to light and spread the Green Revolution. In the early years, the team was led by Dr. D.S. Athwal, who began to multiply seed of Kalyan (later named Kalyansona) in the summer of 1964. Today the team of highly productive scientists is led by Dr. Khem Singh Gill. I congratulate you all for your many great contributions towards making the Green Revolution a sustainable and expanding reality.

I will briefly describe the happenings in the Indian program. The average production of wheat over the 1959 to 1966 period was 10.95 million metric tons. After three years of testing on hundreds of farms, the high-yielding dwarf Mexican wheats—together with improved agronomic practices which permit them to express their high genetic yield potential—were introduced into India on a commercial scale in the 1965-1966 and 1966-67 crop seasons, when more than 18,000 tons of seed were imported from Mexico. Since then, both yield and production have increased spectacularly. Indian wheat production reached a peak of 96.9 million metric tons in 1986 more than quadruple, the yearly production of the 1959 to 1966 period; yields increased more than 123 per cent in the same period. The increase in gross value of product from the crop in 1984, due to increased wheat production over the base period, was 5.9 million dollars, most of which found its way into the pockets of several million small farmers. The additional production in 1986 over that of the 1959 to 1966 base period was sufficient to provide 65 per cent of the calories for 262 million people. Had the 1959 to 1966 yield/hectare prevailed, it would have required 45.5 million hectares to have produced the 1984 harvest instead of the 24.4 million hectares that actually were involved; thus a saving of 29.4 million hectares of land for other uses was realized. Perhaps even more important, is that the increase in wheat production, combined with corresponding increase in rice production, (resulting from the introduction of high yielding IRRI rice varieties), made India in 1977 self-sufficient in cereal production for the first time. Moreover, during the wheat and rice harvest of 1978 and the wheat harvest of 1979, a grain reserve stock of 22 million metric tons was accumulated. The monsoon failed in the summer of 1979, resulting in what was reputed to have been the worst drought in 90 years. Despite the drought, which resulted in a drop in rice production of 12 million tons, India fed its people from the reserve grain stock and emerged with a reserve of about 7 million tons of grain storage when the wheat harvest of 1980 commenced. There was, however, no hunger-famine crisis such as occurred in 1965-1966—thanks to the Green Revolution.

The rice revolution in India followed closely on the heels as the wheat revolution. Its progress is clearly shown in Table 2 and Fig. 7, 8 and 9.

Since 1971, Indian rice production has increased from 36.4 million tons to 64.2 million tons. During the same period rice yields increased from 0.981 kg/ha to 1.570 kg/ha. The increase of the 1986 grains harvest over the 1970 (base) harvest—an additional 28.43 million tons—provided 65 per cent of the calories for 205 million adults.

Impact of Improved Technology on Indian Rice Production

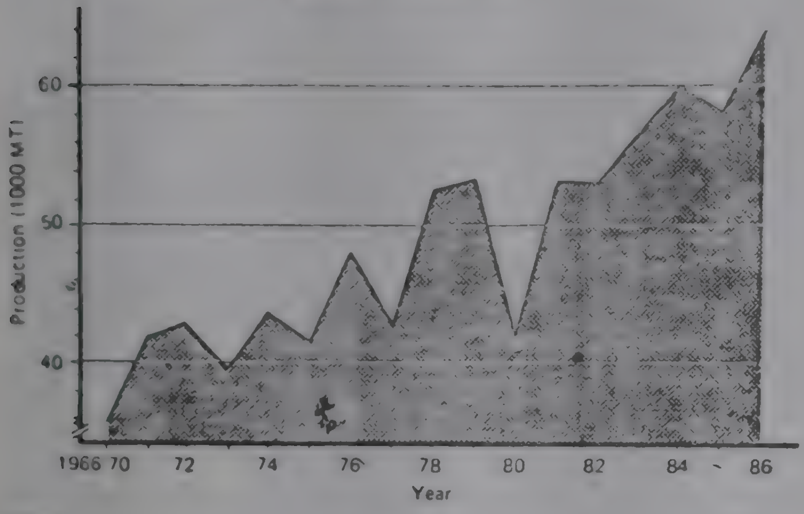

Fig. 7

Impact of Improved Technology on Indian Rice Yield

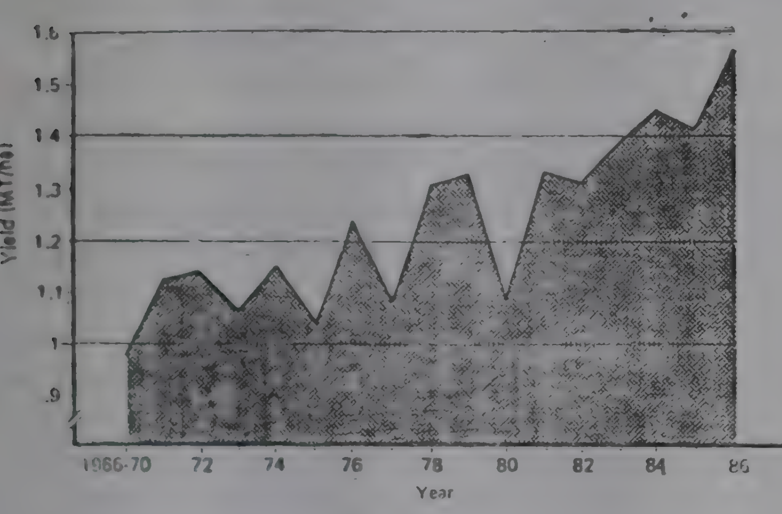

Fig. 8

Additional Adults Provided with 65% of Daily Calories as a Result of Increased Indian Wheat Production

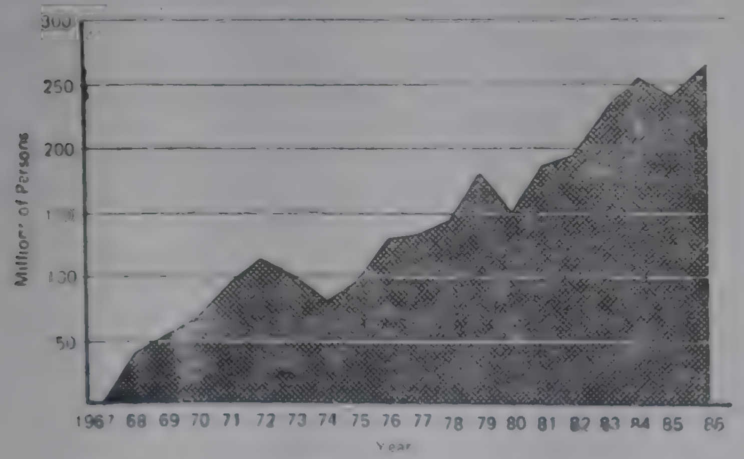

Fig. 9

The dramatic increase in production of wheat and rice in India over the past 20 years is the result of the interaction of the widespread use of high-yielding disease resistant dwarf varieties, the use of more fertilizer, improved cultural practices and wise government economic policies that stimulated production. The increased use of fertilizer to restore soil fertility (Fig. 10) combined with the use of high-yielding varieties were the two principal contributors to changes in yield and production. It is, however, impossible to de-aggregate the impact of fertilizer on wheat and rice production since fertilizer consumption data are only available for all crops. Moreover, lest we forget the changes in wheat and rice production technology combined with the use of more fertilizer have also ushered in widespread use of double and sometimes triple cropping on the same land, which has further contributed to food production.

Increase in Indian Fertilizer Consumption for All Crops

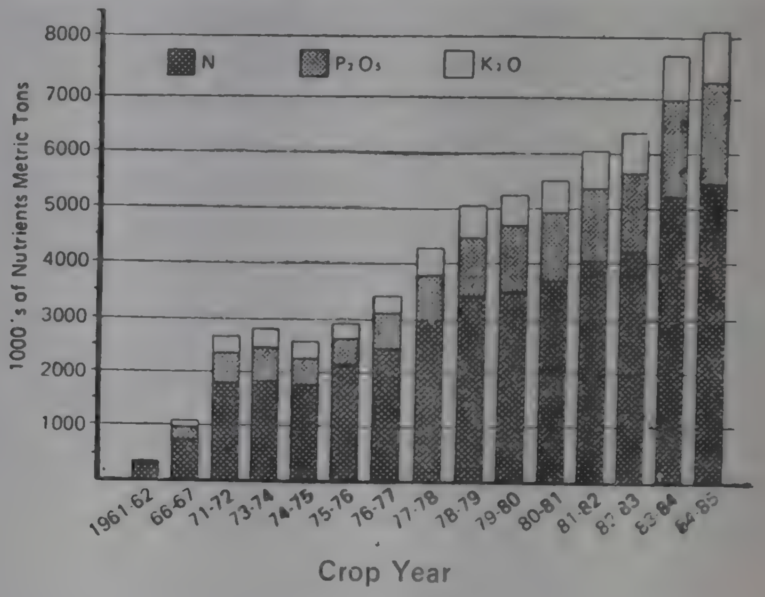

Fig. 10

Pakistan has also made spectacular progress in increasing wheat and rice yields, employing the dwarf Mexican wheats and dwarf IRRI rice varieties. Since 1966, wheat production has increased from about 4 million metric tons to 13.9 million metric tons in 1986—an increase of more than three-fold. Yields have more than doubled in the same period. In fact, until 1969, when political instability set in, it was making faster progress than India. It became self-sufficient in wheat production for the first time in 1968, and then retrogressed to become a modest importer as progress in production slowed because of political instability, and per capita production fell, because of rapid population growth. In recent years, its wheat research and production program is back on track, producing adequate wheat for domestic needs. Although its rice production is only about one-fourth that of its wheat production, it has been a rice exporter for the last 12 years.

Turkey has more than doubled its wheat production in the last 10 years and has again become a modest exporter. Bangladesh, although still a small producer of wheat, has made spectacular progress in increasing production in the last five years.

The People's Republic of China has made fantastic progress in increasing cereal production during the past decade. It has long been the number one nation in rice production and ranks second only to the United States in maize production. In 1984, China harvested 87.7 million tons of wheat and thereby displaced the Soviet Union, which harvested 76 million tons, as the number one wheat producer in the world. Most of the wheat grown in China is from winter varieties; however, the dwarf Mexican spring wheats have been used commercially in the south (along the eastern coast) where winters are less severe, and in the north-east provinces (especially in Kirin), where they are sown in spring.

The CIMMYT (Mexican) dwarf wheats and their derivatives, selected in national programs in more than 40 developing countries, are now grown on about 45 million hectares in the developing nations, including Guatemala, Columbia, Ecuador, Peru, Bolivia, Chile, Brazil, Morocco, Algeria, Tunisia, Egypt, Kenya, Zimbabwe, Zambia, Saudi Arabia, Jordan, Lebanon, Syria, Iraq, Iran, Afghanistan, Nepal and Bangladesh. They are also grown on large commercial areas in such developed nations as the United States, Canada, Australia, New Zealand, Spain, Portugal, Italy, South Africa, Israel and Argentina.

It seems incredible to me even today that an Iowa farm boy of very modest beginning could be privileged to participate even modestly and indirectly in wheat revolutions in many countries around the world.

Achieving a Green Revolution : Sorghum and Maize in Africa

Newspaper stories and television programs—depicting the hunger, starvation and human misery in African nations over the past three years—have resulted in the

TABLE 2. **Impact of Improved Technology on Indian Rice Yield, Production and Land Use Before and After the Green Revolution.**

Year (Harvest)	*Area harvested* 10000 *Ha*	*Yield harvested*	*Production* 1000 *MT* (*A*)	*Millions of adults provided with 65% carbohydrate needs by increased rice production*	*Area required to produce crop at* 1966-70 *yield level* 1000 *Ha*	*Area saved by yield increase over* 1969-70 1000 *Ha*
1966-70 (C)	36,360	0.981	35,770	—	—	—
1971	37,590	1.123	32,230	47.2	43,048	5,458
1972	37,760	1.141	43,070	53.3	43,904	6,144
1973	36,690	1.070	30,280	25.6	40,041	3,351
1974	38,290	1.151	44,050	60.4	44,903	6,613
1975	37,890	1.045	39,580	27.8	40,437	2,487
1976	39,470	1.235	48,740	94.7	49,683	10,213
1977	38,510	1.088	41,088	44.9	42,732	4,222
1978	40,280	1.308	52,670	123.3	53,690	13,410
1979	40,480	1.238	53,770	131.9	54,811	14,331
1980	38,970	1.082	42,180	46.8	42,997	4,027
1981	40,151	1.335	53,631	130.4	54,670	14,519
1982	40,705	1.314	53,593	130.1	54,631	13,926
1983	40,953	1.392	57,000	154.9	58,104	17,151
1984	41,200	1.459	60,100	177.6	61,264	20,064
1985	41,100	1.418	58,300	165.5	59,429	18,329
1986	40,900	1.570	64,200	207.5	65,443	24,543

A—Brown rice.

B—Calculations based on providing 65% carbohydrate portion of a diet of 2350 calories/day or 375 g of rice/day. Source of Data—Ministry of Agriculture of Government of India.

C—Average for five years.

initiation of an avalanche of assistance programs by many European, Canadian, Australian and American governments, as well as by international and private organizations. As a result, there are currently many hundreds of foreign agricultural technical assistance and development programs in operations in Africa, Asia and Latin America, designed to assist the developing nations to improve their agriculture, food production and standard of living. In Kenya alone, there were more than 1000 development projects operating in 1985. Many of them are "busy work" report writing projects that point out the social and economic ills of the country. Few of them have action programs to correct these ills. Unfortunately, learned academic reports do not necessarily equate to more food production. Is there any wonder then that the Kenya government has difficulty in utilizing the many proposals? Does this multitude of projects add more confusion than enlightenment to Kenya's agricultural, social and economic problems? Most of these projects are relatively ineffective, despite the huge sums of moneys that are being poured into them. As I see it, there are four primary reasons why most foreign agricultural technical assistance programs are relatively ineffective, if not doomed to failure. These are:

(1) Program plans and budgeting commitments are of too short a duration.

(2) Lack of continuity in assigning expatriate scientists to foreign assistance programs.

(3) Inadequate coordination of research effort across scientific disciplines, and lack of research and extension program linkages with economists and political leaders, who establish economic policy.

(4) Inadequate provisions for advanced degree training for young scientists of the host country, so that they will be prepared to carry on the program effectively when the foreign assistance program is terminated.

Now, a brief statement about each of these factors which limit the effectiveness of the technical assistance programs.

In most developing nations, as is the case in most African nations at present, there is an extreme shortage of trained scientists. Moreover, either there are no research and extension organizations, or they are very weak and ineffective. Under such circumstances, there are no easy short-term fixes. Consequently, a "donor" country that is considering establishing a foreign technical agricultural assistance program in a developing nation must commit itself to supporting such a program for a minimum of ten years, and preferably fifteen, if it is to produce a lasting and positive impact.

To be effective, a foreign technical assistance program must be staffed with a small number of outstanding, well-trained, well-motivated, enthusiastic scientists who are capable of working effectively and tenaciously with the scientists of the host country. They must also be self-motivated to learn as much as possible of the history and culture of the host country and to develop at least a working knowledge of its principal language. By so doing, one establishes credibility and gains the confidence of the technicians, scientists and government leaders. Expatriate scientists must have good health and outstanding physical stamina, which will enable them to work effectively side-by-side with the young scientists of the host country under difficult "back-country" conditions. The expatriate scientists must be "hands-on" working scientists, not consultants, if the program is to be successful. And above all, they should have leadership ability and personalities capable, by example, of stimulating their young host country's scientific colleagues.

Continuity of scientific research personnel is essential if an effective program is to be developed. It takes at least three years of imaginative and dedicated experimentation for a scientist in each discipline (e.g., plant breeding, agronomy and soils, weed disease and insect control) to establish an effective order of priorities to attack and ameliorate the major factors that impose bottlenecks on production. It takes another three to five years to develop, through an aggressive on-farm research program, an appropriate and well-tested production package to extend to farmers. Unfortunately, because of donor government policies in many, if not most, foreign assistance programs, scientists remain in a given post for only two to three years before being moved to a similar post in another country, often with a different culture and language, with different soil and climatic conditions, and often to work on another crop.

In many foreign assistance programs, many of the scientists are professors who have been on detached assignment from a university in their home country, after which they return home, to be followed, in turn, by another professor on leave for a similar period. Such lack of continuity of scientific personnel is self-defeating. An effective, reliable package of improved production technology cannot be put together without continuity of capable, dedicated, research scientists in each of the scientific disciplines, working at both the experimental station and farm level. All too often, to make matters worse, much of the time of these expatriate scientists is spent in writing reports to satisfy bureaucrats of both the national and international breed or for self-advancement in their own organization. With all of these handicaps, is there any wonder why many technical assistance programs are ineffective? The most frequently missing component, required to make a foreign agricultural assistance program effective in increasing production, is the integrator.

I have found from experience that, no matter how excellent and spectacular the research is that is done in one scientific discipline, its application in isolation will have little or no positive effect on crop production. Consequently, I have been forced to become an integrator across scientific disciplines, in order to assemble a reliable pakage of production technology capable of dramatically increasing yields, when it is properly applied.

Let me be perfectly clear; we need many well-trained. imaginative, scientific specialists in all disciplines that bear on agricultural production. In the developed nations it is not difficult to identify many outstanding scientists that have these qualifications. But specialists alone will not suffice in developing nations, where most agricultural scientists do not have rural backrounds, and where research and extension organizations are weak and in their infancy. In the developing nations we also need a few of those rare "green-fingered scientific integrators", call them "scrambling scientific quarterbacks" if you prefer who are comfortable, willing and capable of venturing across the gray areas between scientific disciplines to integrate the composite knowledge into a package of improved technological practices and see that it is applied to produce more food.

Since I was originally trained as a forester, permit me to use the analogy of a forest to emphasize my point. It is always more comfortable for most scientists to confine their research efforts to his/her own speciality—and thus stand comfortably in the thoroughly familiar and well-understood shade of the tree of one's own discipline—while ignoring the shade of the other trees. But the forest is made up of the shadows cast by many trees, of different sizes and often also of a considerable number of different species. Consequently, in order to best manage the forest for multiple-use purposes (e.g., lumber, pulp-wood and firewood production, watershed protection, erosion and food control, wildlife habitat and recreation on a sustained yield basis, a few scientists are needed who not only have outstanding credentials and skills in their own discipline, but at the same time can integrate across the shadows or scientific disciplines cast by all the trees of different sizes, ages and species in the forest. Only with such research integration can one develop and fit together the different pieces of the jigsaw puzzle of production, and by so doing, assemble a package of appropriate technology capable of increasing and sustaining the overall productivity of the forest systems to meet human needs.

So it is, also, with agriculture and food production. The "green-fingered" scientific integrator must assume the responsibility for overseeing the evaluation of the new package of technology on many farms, in order to establish that it has the potential to increase yields by at least 50 to 100 per cent, with acceptable levels of risk, over that of traditional methods. While this is being done, he must gain credibility and establish himself as a concerned, trustworthy collaborator with scientists, technicians and farmers of the host country. Finally, at the opportune time (which is difficult to determine, for in a large part it depends on intuitiveness developed by intimate contact with the program, culture and country), he must carefully and skillfully wander into the swampy, "no-man's land" of economic planners and political leaders who have the responsibility and power to control economic policies. They must be informed and convinced of the potential increase in yield and production that is possible if enlightened economic policies are embraced, which will stimulate widespread adoption of the new technology by farmers, and hence, result in large increases in food production.

I hope that there are several early instars of "integrator scientist" present in this audience today. The developing nations need them badly now.

The spectacular increase in wheat production and rice production that has been achieved in many developing countries during the last two decades should bring hope to food deficit African nations. To convert the hope to reality will require drastic changes in government attitudes and policies. If the governments of the food-deficit African nations are to become serious about increasing food production, they must develop the political will to : (1) abandon the policies of cheap food for benefit of urban consumers (minority), a policy that has been maintained at the expense of the large, poor, subsistence food producing rural majority; (2) invest more capital in rural development; (3) provide greater investments in rural education; (4) provide greater support for the training of agricultural scientists; and (5) provide increased and more continuous economic support for dynamic programs in agricultural research, extension and production.

Currently there exists, in several African food-deficit nations, several improved varieties of sorghum and maize that are superior to local varieties. Moreover, there is considerable information on improved agronomic and plant protection practices, that when applied properly, will permit the improved varieties to manifest their clear superiority over the traditional varieties and practices. The improved varieties and agronomic practices for sorghum and maize have been developed jointly by national programs and ICRISAT and CIMMYT, respectively. At present, this research, for the most part, lies unused or under-utilised. What is needed now is the political and scientific courage and will to launch and support aggressive extension and production campaign programs in both sorghum and maize in areas where these improved varieties and agronomic practices are appropriate. A revolution in sorghum and maize production in a few areas, where the research materials indicate this is possible, must be made to happen. What is needed to make it happen now are several charismatic inter-disciplinary integrators that : (1) know intimately the idiosyncrasies of the sorghum and/or maize crops; (2) have leadership ability and can gain the confidence and support of the scientists of the host country; (3) have the skills to get effective economic policies established to support a dynamic production campaign; and (4) know how to maneuver to minimize the negative stiffling effects of the bureaucracies of both the national and international breeds. In other words, we need another scientist with the multiple skills of my long-time Canadian scientific associate and good friend, the late Dr. R. Glenn Anderson, who led the wheat revolution in India in the 1960s, or of another equally effective leader, like my long-time Mexican scientific associate and friend, Dr. Ignacio Narvaez, who led the wheat revolution in Pakistan during the same period. Success in revolutionizing production of a crop in one geographic area will catalyze enthusiasm and provoke changes in the other areas as soon as the research data justify such an undertaking.

A look ahead at food problems for the next doubling of world population

I would be remiss if I did not express my concern about the monster that is human population growth.

As I look ahead at the magnitude and complexities of the world food needs for the next half-century, I am apprehensive. In 1975, when the world population rea-

From left to right : Shri S.S. Ray, Governor of Punjab and Chancellor of Punjab Agricultural University, Division, Winrock International Institute for Agriculture Development, USA, Dr. Dev Raj Bhumbla, forme Head of the Department of Plant Breeding at the International Rice Research ched 4 billion, the world produced an all-time record harvest of 3.3 billion metric tons of all kinds of food (e.g., grains, pulses and grain legumes, tubers, oilseeds, sugar, vegetables, fruits, nuts, sugar, eggs, milk, cheese, meat and fish). If human population growth had continued at the 2 per cent levels of 1975, it would have doubled to 8 billion in about 40 years or by the year 2015 AD; consequently, food production must be doubled and more equitably distributed in the same period. There is evidence that worldwide population growth is beginning to slow somewhat, especially in the developed countries, but it continues to grow at a frightening rate in most of the developing countries. But even if we assume that this reduced rate will prevail and that the time to double to 8 billion will increase by 50, 60 or even 80 years to 2025, 2035 or 2055 AD respectively, the necessary food production increases are staggering.

Lest we forget, the world population growth rate expressed as annual percentage of natural increase is deceiving. Although the percentage of annual increase worldwide has failed from 2.0 per cent to 1.7 per cent in the last five years, the annual increment in human numbers continues to increase frighteningly because of the larger population base. We need to remembe that it took perhaps one to two million years for the human population to grow to one billion, which it reached in about 1850. It required only 80 years to reach a population of two billion (1930) and the three billion figure was reached in 1960 in only 30 years. The 4th billion was reached in 15 years; and the addition of the 5th billion was completed in 11 years, or by 1986.

Moreover, most of the increase in food production in the future must come from increases in yield from land already under cultivation, since in most of the densely populated countries there is little additional land suitable for agriculture that can be brought under cultivation without huge investments in irrigation, which are both extremely costly and slow to bring on stream.

I am cautiously hopeful that food production can be doubled within the next doubling of world population (40 to 60 years) provided that world governments have the political will and give high enough priority and continuing support to the agricultural sector in their development programs. It cannot be achieved with the miserly and discontinuous support that has been given to agriculture and forestry by governments over the past 50 years.

ng the degrees of Doctor of Science (Honoris Causa) on Dr. D. S. Athwal, Director, Technical Cooperation ancellor of Haryana Agricultural University, Dr. Gurdev Singh Khush, Principal Plant Breeder and Los Bonos, Philippines and Dr. N.S. Randhawa, Director-General, ICAR, New Delhi.

To double food production will require a change in focus in development programs and an upgrading of the effort in agriculture and forestry, especially in the food-deficit developing nations, where crop yields are still low. We must train more and better agricultural scientists, expand our scientific knowledge, and improve and apply better technology if we are to make our finite land and water resources more productive.

We must educate the public to realize that producing more food and fibre and protecting the enviornment can, at best, be only a holding operation while the population monster is being tamed. In recent years, the "human rights" issue has generated must interest and debate around the world. It is a utopian issue and a noble goal to work toward. Nevertheless, in the real world, the attainment of human rights in the fullest sense cannot be achieved as long as hundreds of millions of poverty stricken people lack the basic necessities for life. The right to dissent does not mean much to a person with an empty stomach, a shirtless back, a roofless dwelling, the frustrations and fear of unemployment and poverty, the lack of education and opportunity, and the pain, misery and loneliness of sickness without medical care. It is my belief that all who are born into the world have the moral right to the basic ingredients for a decent, human life. However, to speak glibly and sanctimoniously about the mortality of the "right to life", while ignoring the mortality of the "quality of human life," only adds confusion to this fundamental complex issue.

Those of us who work on the food production front, I believe, have the moral obligation to warn the political, religious and educational leaders of the world of the magnitude and seriousness of the arable land, food and population problems that loom ahead. If we fail to do so in a forthright, unemotional manner, we will be negligent of our duty and inadvertently contribute to the pending chaos of incalculable millions of deaths by starvation. The imminence of the disaster is before us. It is closer than most people realize, or are prepared to admit. The problem will not vanish automatically; to continue to ignore it will make its solution ultimately more difficult.

A solution to this complex problem is imperative. Why does mankind continue to inadvertently and irresponsibly try to see how many additional people can be "heaped" onto the planet earth ? Why do we continue to apparently always believe that future, newer and better technologies will expand the carrying capacity of our planet, while at the same time assure an improving standard of living for all ? It appears to me that we are behaving in a most irrational and irresponsible manner. Our behaviour implies that when we can no longer provide the good life for the ever-increasing number of people on the planet earth, we will always be able, at the appropriate time, to dispatch the excess numbers to colonize beautiful, hospitable virgin planets in other solar systems in outer space.

In remembrance of all those departed who contributed so much to the success of the Green Revolution

As I stand before you today my memory rushes back to a similar Convocation in 1969 here on the campus of the Punjab Agricultural University when I was honoured by being awarded an Honorary Doctor of Science Degree from your great university from the hands of the late Vice-Chancellor Dr. M.S. Randhawa. It also brings back fond memories of my great friends the late Dr. R. Glenn Anderson and Dr. V.S. Mathur who contributed so much towards the success of the Green Revolution here in India and also world wide.

In Conclusion

To those who are now completing their formal education let me add a last word of advice for whatever it may be worth. Don't believe all of the gloom and doom and gloom that has become one of the worst pollutants of the environment during the past two decades.

Despite all of today's gloom to doom, we live a longer and better life than all previous generations. Remember that constructive work is the best medicine God ever gave to man and that you can't win in any athletic game with negativism—much less so in the most important game of all, the game of life! Don't become complacent! I am convinced that Thomas Jefferson was thinking of this as he reflected on the decadence of past civilizations when he said: "Ease and security, were these the drugs that abated the eternal challenge in the minds of men ? And did nations, like men, grow sluggish and apathetic when they were well-fed and bodily comfortable?"

And finally, remember that education is a continuing process as Will Durant expressed so beautifully when he said: "In my youth, I stress freedom, and in my old age (79 years), I stress order. I have made the great discovery that freedom and liberty is a product of order. When I was 19, I knew everything and my father knew nothing. When I was 29, I was surprised how much my father had learned in the last 10 years. Now at 79, I know nothing ! So education is nothing more than a proressive discovery of our own ignorance."

So, keep studyng and learning. And God bless you all.

Good luck and good-bye. ☐

WHAT MAKES AN OLYMPIAN?

G.B.K. Hooja*

Condemned as a nation of "opium eaters" by European Imperialists, China has been transformed into an Asian giant within a span of 40 years. The secret lies in Mao-Ze dong's philosophy of education. He laid emphasis on three aspects of education—moral, intellectual and the physical. He realized that a good physical body was needed from the stand point of productivity, of military defence and of social well-being and accordingly proceeded to develop the physical education system in China in two parts.

In the first place, several sets of physical exercises were broadcast in sequence over the radio everyday, sometimes with musical accompaniment, for the public to participate in for about 5 minutes.

In the schools, at recesses, between the classes, such exercises and music were broadcast over the microphone every day. Students and teachers knew how to exercise information in athletic grounds or in the corridors.

Same about offices and factories.

Because of their recreational value, these intervals became popular. Providing the workers with nutritious diet automatically followed, since collective action and socialistic discipline were seen as the concomitants of such physical education.

The other part of physical education was the Labour Defence Scheme. The slogan was to train the body for the defence of the fatherland. The programmes included running (including charging), jumping (including jumping over barricades), throwing (including throwing grenades) and shooting. The military tenor was deliberately kept high.

Talent was spotted out of the vast reservoir of manpower thus motivated. Those who had potential and were so motivated became national level athlete or adopted sports as a profession to become physical education teachers after due training. Not everyone was conscripted. In fact, those found physically fit and politically trustworthy were alone recruited. However, it was considered to be an honour to be drafted.

In GDR also, lessons in sports are compulsory at the school level. They form part of the integrated curricula. In fact, swimming has become part and parcel of education. 99% of school-leavers are swimmers.

Similarly, factories and offices provide bases and facilities for mass sports. In this, the trade unions too act as catalytic agents.

In USSR too, the main feature of the sports movement is its mass character. About 70m people out of 250m people go out for active sports. The country boasts of 3,300 large stadia. There are 66,000 gymnasia, 6,00,000 sports grounds, 1,500 swimming pools. Some 3,00,000 specialists including about 2,00,000 qualified trainers are employed in the task of spreading the cult of physical culture and sports throughout the length and breadth of the country.

Everyday, thousands of factory workers do "keep fit" exercises. The same are compulsory for school children of all ages before the beginning of lessons and in the morning radio broadcasts exercises for adults and children.

The main task of sports organization in USSR is to draw into the orbit of physical culture as many people as possible. Till recently, special emphasis was laid on popularisation of sports in organized establishments, but now attention is shifting to the development of sports and physical culture in residential neighbourhoods. The plans of colony development are not approved unless they provide for sports facilities.

The Peoples' Games of USSR, known as *Spartakiads* are the biggest complex tournaments in the Soviet Union. They are in reality *mass festivals* of physical culture and sports. "Physical culture and sports have really become, in this country, the peoples' asset, an inseparable part of the culture of this Socialist Society, displaying new sports talents in all Union Republics of this multi-national country", says Sergei Pavlov, the Chairman of the USSR Sports Committee.

As for India, it may be too much to expect changes overnight, but we must traverse this path, sooner than later, for the health, honour and defence of our motherland. It is time we realized the importance of integrated physical activity in the scheme of holistic education. The aim must be to develop an all-round personality strong enough to face the challenges of

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life both as individuals and standard bearers of this great country.

Once such a big reservoir becomes available, it shall not be a difficult task to select top class performers in various fields, performers with high motivation, a strict sense of discipline and the requisite 'Killer' instinct.

It must not be forgotten that international sports have now become arenas of cut-throat competition. As Cohen (1973) says the essence of modern sports is "sublimation of aggressiveness... Sports Competition is nothing but the violence of the cultured man, a constrained turbulance. The player lets himself go within a legitimate code of conduct (of course)".

Here comes the importance of the role of the physical education teacher, who should not only be an expert in the matter of skill training, but also an engineer who understands the mechanism of the human behaviour on the playfield under extremely diverse situations and is able to make use of modern science and technology to guide the sportsmen to allay their tensions, anxieties and fears, so that they may discard all negative feelings and play "cool-headed", confident of victory and glory for self and the nation! ☐

Bringing Universities and Villages Closer

(Continued from page 2)

to participate in) could be entrusted to it. In such cases the government personnel and resources could be utilized directly through the university. Here the government officers and budget could be given to a university to work out particular agreed programmes in one or more blocks by trying out alternative methods on the basis of input of its academic and technological resources. These could help to find improvements possible to be incorporated in the present system. Such endeavours will also benefit the university by bringing it closer to the problems of the people and at the same time help the government in improving upon the existing mode and methods used for implementing national development programmes.

These suggestions however are only indicative and could be considered as illustrative and more of the same type could be added to the list. It is clear that the New Education Policy specifically requires the universities to take the above mentioned line of approach and so considerations of the various options available is imperative. ☐

ADMISSION TO M.PHIL (PHYSICS) COURSE 1987
at the
Centre For Development of Physics Education

University of Rajasthan
JAIPUR-302004

Applications are invited for admission to M. Phil (Physics) course 1987, being conducted by the Centre for Development of Physics Education. Candidates who have passed M.Sc. (Physics) with at least 55 per cent marks are eligible for admission. College teachers may also be admitted to the course. They may, however, have to arrange their teacher fellowships through their own institutional channel.

The course consists of three theory papers plus dissertation/project work and practicals, and is ordinarily completed in one academic session. Application on the form available from the University accompanied by attested true copies of marksheets, certificate, etc. of examinations, must reach the office of the undersigned latest by **July 21, 1987.**

S. Lokanathan
DIRECTOR

Institution of Information Technology

The Institution of Information Technology (INFOTEK), a professional association of information scientists has been formed to promote scientific dissemination activities on a *non-profit basis* which shall include, inter alia, the following:

(1) To promote activities of Research in Information Processing especially in Information storage and Retrieval systems.

(2) To popularise computer handling of information.

(3) To develop information handling tools such as indexes, subject lists, thesaurus, classaurus, etc.

(4) To render advisory service relating to information storage and retrieval, setting up of scientific and technical libraries/information centres.

(5) To develop manpower and expertise in information processing and handling with special emphasis on Computer application.

(6) To organise conferences, Get togethers, Seminars and Workshops to discuss professional matters relating to modern developments in the field of Information Systems/Services.

(7) To encourage integration of interfacing technologies such as Computer Technology, Logic and Statistical Application, Reprography, Micrographics and Telecommunication with Information Technology.

(8) Compilation of Reference Materials such as Directories, Handbooks, Manuals Bibliographies, Guide Books, etc.

(9) To publish a professional periodical to disseminate modern developments in the field of information technology.

Dr. V.A. Kamath (President of Micrographic Congress of India, New Delhi and Adviser, Nehru Centre, Bombay) has been appointed as the President and Dr. F.J. Devadason (Head, National Information Centre for Leather and Allied Industries, CLRI, Madras) as the Vice-President of the Association. The other Office-bearers are Mr. R. Vengan (Documentation Officer, CLRI, Madras), Secretary; Mr. R. Veeraraghavan (Scientist, MERADO, Madras), Joint Secretary and Mr. T. Krishnaswamy (Industrial Liaison Officer, CLRI, Madras), Treasurer. Mr. K. Ramamurthy, M.P. is the Patron-in-chief of the association.

Gujarati Word Processor

Dr. N.S. Randhawa, Director General of the Indian Council of Agricultural Research (ICAR) inaugurated the country's first word processor in a regional language at the Gujarat Agriculture University's computer centre. Dr. Randhawa said that this Gujarati word processor would be a great help to Indian scientists, whose number was more than that found in any other country of the world. He said that the Rs. 600 crore spent on 29,000 scientists of the country was ill-utilised mainly because our scientists do not have modern and efficient support systems like computers to help them with their research analysis.

He said that in addition to research analysis, the word processing package of the Centre would be used to maintain students records, chalk out courses for undergraduate students of the university, for administrative work like maintaining records and mainly for providing agricultural economics data which is otherwise done by a large staff and is also very time consuming.

ONGC Plans Environment and Safety Centre

The Oil and Natural Gas Commission (ONGC) proposes to set up an environment and safety centre in Goa. This was revealed by the ONGC Chairman Colonel S.P. Wahi while delivering the presidential address at the three-day national conference on "ocean technology for the 21st century" jointly organized by the Department of Science and Technogy, Department of Ocean Development and the National Institute of Oceanography at Dona Paula, near Panaji recently.

The main objective of the centre would be to train manpower for various environmental and safety programmes directly related to the ONGC's exploration operations.

The proposed centre is expected to cost about Rs. 4-5 crores and would be ready within the next three years.

Enhanced UGC Grants for Dibrugarh University

The University Grants Commission (UGC) is reported to have agreed to raise the seventh plan allocations for the Dibrugarh University from Rs. one crore to Rs. 1.22 crore. However, it has also asked the university to augment its own resources for expansion and consolidation. The UGC has also agreed, it is further reported, to consider university's proposals for an Extension Service Centre, a Centre for North Eastern Studies and a Centre for Population and Demographic Studies in the Departments of English, Political Science and Economics respectively. The grant for these centres would be in addition to the plan allocation.

UGC Assistance for Botanical Research at Patna Varsity

The University Grants Commission (UGC) is reported to have identified the Botany Department of the Patna University for financial assistance of about Rs. one crore under its COSIST programme. The areas identified for research are cytogenetics and molecular genetics in respect of important forage and crop plants. This assistance will help the department to give a boost to its research work and improve the standard of teaching.

Summer Institute on Neuro-Pharmacology

Professor Allaudin Ahmed, Vice-Chancellor, Sher-e-Kashmir University of Agriculture and Technology, Srinagar, inaugurated a 20-day Summer Institute on Neuro-Pharmacology organised by the Haryana Agricultural University recently at Hisar. He said that the neuro-pharmacologists had a very important role in guiding and educating the society and that they should conduct their researches from the sociological point of view.

Prof. Ahmed, who himself is an eminent pharmacologist, said that environment did not mean only the forests and rivers but had much wider connotation. The toxic effects of insecticides and pesticides of macro and micro flora needed to be thoroughly discussed and solutions should be found on the long term effects of chemical compounds on our whole ecosystem so that ill effects on animals and humans should be obviated.

Over 24 scientists, researchers and teachers, both from the medical & veterinary institutions of the country participated in the three weeks' institute.

Research Projects

(1) Cochin University of Science and Technology

The Kerala State Committee on Science, Technology and Environment has recently sanctioned two research projects to the Cochin University of Science and Technology.

The project entitled: "Study of phase transitions using wideline NMR technique" will be conducted at the Department of Physics. Prof. C.P. Girijavallabhan is the Principal Investigator. The amount sanctioned is Rs. 50,000 for three years.

Another project entitled : "Studies on the effect of pesticides and other organic compounds on the water and biota to Cochin backwater" will be conducted at the School of Marine Sciences under the joint investigatorship of Dr. Jacob Chacko and Dr. M. Chandramohankumar. The amount sanctioned is Rs. 50,000 for two years.

(2) Anna University

- A Training Network is being established by the Government of India in collaboration with World Bank/UNDP (TAG) and bilateral agencies to train field staff and others to effectively plan, implement and maintain Water Supply and Sanitation Projects, with emphasis on the use of low cost appropriate technology needed to serve low income population of urban fringe and rural areas. The Network will consist of participating institutions at regional level and key institutions at State level. The Ministry of Urban Development, Government of India, has identified the Anna University and the All India Institute of Hygiene and Public Health, Calcutta as two participating Institutions at Regional level in the Network.
- The Anna University, Madras, will shortly acquire an Interactive Image Processing Computer System for its Institute of Remote Sensing. The Government of Tamil Nadu have sanctioned the necessary funds fo the purchase of the system.

IGNOU Launches Bachelor's Degree Programme

The Indira Gandhi National Open University has announced the launching of its Bachelor's Degree programme for such persons as do not have the requisite formal qualifications i.e. 10+2 or the Intermediate or equivalent qualification but shall have attained the age of 20 years on 1st January, 1988. The program will thus cater to the higher education needs of all those who desire to improve the qualifications, skills and competence. The candidates shall be required to take an entrance test to be conducted sometimes in September 1987. The test is intended to make an appraisal of the candidate's mental ability, general awareness, comprehension, etc. The medium of the test shall be English and Hindi. Last date for the receipt of application forms and fee of Rs. 25/- for the entrance test is **July 15, 1987**.

The Bachelor's Degree Programme will be modular in nature—the modules being called courses. On the successful completion of a course the students will get credits assigned to the course. A total of 96 credits shall be required to be earned to qualify for the award of the degree. Each credit would be equivalent to 30 study hours. Thus a student will be expected to put in 2,880 study hours over a period of 3 to 8 years to be eligible for the award of the degree. Each course of study under the degree programme would generally be of 4 to 8 credits. However, if a student takes up one or more courses just for enrichment purposes and is not keen to complete the degree programme, he/she will be awarded completion certificate for the course. Later on, if a student decides to work for the degree, the credits assigned earlier shall count towards the degree.

News from Agril. Varsities

National Agro-Forestry Research Centre

A national agro-forestry research centre will soon be opened in the U.P.'s Bundelkhand region. This was hinted at by the Union Minister for Agriculture and Co-operation, Mr. Gurdial Singh Dhillon, while inaugurating a seminar on Soyabean production and development at Jhansi.

He said that the setting up of this centre would help augment the integrated activities of agriculture and forestry in the country, particularly in the Bundelkhand region and subsequently the farmers of the region would prosper.

Mr. Dhillon said that the need of the hour in the field of Agriculture in the country was to increase production of oilseeds, so that it could be raised from 1.5 crore tonnes to 1.8 crore tonnes by the end of the Seventh Plan. He said that the Union Government had set up "Oilseed Technique Mission with a view to make the country self-sufficient in oilseed production at the earliest.

Mr. Dhillon while appreciating the progress made under the oilseed production programmes, expressed his happiness over the state's second position after Madhya Pradesh, in Soyabean production in the country. He said that soyabean could be aptly called as 'two-in-one' crop because of its 40 per cent protein and 20 per cent oil. Mr. Dhillon assured that Centre would give all support to the soyabean production and development programme in Bundelkhand region.

The U.P. Agriculture Minister, Mr. Narendra Singh, said that arrangements had been made to cultivate soyabean in an area of one lakh hectares in Bundelkhand region this year. Under the programme, provision has been made to extend a subsidy of Rs. 200 per quintal for certified seeds and Rs. 100 per quintal for improved seeds to farmers. Demonstrations on a large scale will also be organised for which subsidy at the rate of Rs. 700 per hectare is admissible.

Dr. N.S. Randhawa, Director General of the ICAR, also addressed the seminar which was attended by over 1000 farmers.

Cold-resistant Rice Varieties

The Sher-e-Kashmir University of Agricultural Sciences and Technology, Srinagar, has evolved two cold-resistant and early maturing varieties of rice for cultivation in areas above 1675 metre altitude in the state. The new varieties K314 and K312 have been evolved by utilising genes from the local cultivars.

According to Dr. R.N. Kaw, senior scientist and plant breeder of the University, about 500 different hybrid combinations were evolved during research work. More than 72,000 plant selections were evaluated for evolving improved rice varieties. He said that local cultivars possessed some cold resistant and fast breeding genes and these traits were continuously being incorporated in the rice breeding programme.

ICAR Regional Committee Meets at JNKVV

The Tenth Meeting of ICAR Regional Committee No. VII (an Inter-state Coordination Committee of ICAR and the States of Madhya Pradesh, Maharashtra, Goa, Daman and Diu) will be held at Jawaharlal Nehru Krishi Vishwavidyalaya, (JNKVV) Jabalpur on July 9-10, 1987. Jointly organised by the ICAR and the JNKVV, the meeting will be attended by the Ministers of State for Agriculture and Veterinary from the States of Madhya Pradesh, Maharashtra, Goa, Daman & Diu. The Director General of Indian Council of Agricultural Research (ICAR), Agriculture Secretaries of the States, Vice-Chancellors of Agricultural Universities and the Directors of Research, Veterinary and Extension of the region would be amongst the other participants.

The committee will review the status of agricultural research and education in various states, while analysing/discussing in depth and making recommendations on the location-specific problems of agriculture, animal husbandry, fisheries and forestry particular to the region. Follow up actions taken by various centres on the recommendations made in its last meeting will also be discussed in detail.

Sports News

Indian Contingent for World University Games

Following participants and officials are leaving for Zagreb on July 5, 1987 to participate in the World University Games:

Tennis

Nandini Rangarajan (University of Bombay);

Nasreen Sujatali (University of Bombay);

Manoj Kumar (Bharathiar University);

Zubin Irani(University of Madrsa);

and M. Balachandran (Anna University).

N. Malikarjuna Rao (University of Madras) will be the coach of the team.

Athletics

Asha Aggarwal (University of Delhi); and

Charulata Naigaonkar (Nagpur University).

Ranjit Bhatia (University of Delhi) will be the leader of the contingent.

AIU News

AIU Honours University Contingents

Association of Indian Universities (AIU) hosted a reception on June 25, 1987 in honour of the University Contingents leaving for USSR and Yugoslavia to participate in the Festival of India and World University Games respectively. Shri D. Aroa, Director General, Festival of India, Shri P.K. Mishra, Director Youth Affairs, Department of Youth Affairs & Sports, Govt. of India and representatives from USSR and Yugoslav embassies graced the occasion.

Over 155 university participants have been selected by the Department of Youth Affairs & Sports for participation in the Festival of India in USSR commencing on July 3, 1987 at Moscow. They will leave in three batches to Moscow, Leningrad and Tashkent.

Following 48 participants left on June 30, 1987 to Moscow for the inaugural ceremony:

Bihu Folk Dance—Gauhati University : Somnath Borah (Ojha), Probin Sarma, Ajit Nath, Subodh Borah, Prasanta Duarah, Srimanta Madhab Bora, Tribeni Bora, Mrinalini Bora, Prosen Bora, Elorananda Rajbanshi, and Indira Barua (Official).

Karagam Folk Dance & Group Song—Bharathidasan University : P. Elangovan, S. Rahim, M. Ilangovan, S. Sekhar, R. Sundararaj, P. Guhanraj, N. Venkatraman, S. Jayasree, S. Saraswathy, Tarun Kumar Tripathy, Samuel Augurtine Thomas, E. Andrew Santhosh, Supratik Mukherji, and Aditya Pratap Mohanty. Accompanists : P. Natarajan, Jame, Simon, V. Nirmala, and Officials H. Md. Salahudeen and Uma Maheshwari.

Ghummar Folk Dance—University of Rajasthan: Neelu Kulshrestha, Bhanu Mathur, Bhagesh Khangorot, Vijay Laxmi Arora, Kavita Saxena, Rajnandini Chhabra, Mukti Saxena, Manju Bhargava, Beena Kummawat, Seema Bhatt, and Yojna Sharma. Accompanists : Barkat Hussain, Meena Gusani, Mohammad and Ikramuddin, and P. Khanna (Official).

Seminar : Anirban Ghosh (Jadavpur University), Gayatri Vedantam (Bangalore University), and Jagdish Narain (AIU) —Official.

Sampson David, Cultural Officer, AIU will be the Group Leader.

UNIVERSITY GRANTS COMMISSION

FELLOWSHIPS AND VISITORSHIPS IN U.S.A.

U.G.C. INVITES NOMINATIONS

The University Grants Commission (UGC) has asked the Universities to nominate senior teachers in Universities and their affiliated colleges for some fellowships and visitorships and post-doctoral research work at the universities and other institutions in the United States.

Teachers with a minimum of 10 years' teaching experience and published research work are eligible for these fellowships and visitorships. The fellowship will be for a period of one academic year (6-10 months), while the visitorship will be for a short period (2-3 months). The U.G.C. will provide international air-fare from India to U.S.A. and back. In addition, the U.S. authorities will also provide allowance for maintenance, books and study-related travel in that country.

The fellowships/visitorships are for fundamental studies in frontier areas in Physics, Chemistry, Mathematics, Life Sciences, Earth Sciences and Bio-Technology, Laser Technology, Marine Resources Development, Computer Science and Technology, Semi-Conductor Technology, Micro-Processors applications and Micro-Electronics, Communication Technology, Educational Technology and Mass Media, Renewable Energy Studies, Environmental Sciences and Technology, Urban Development and Planning, Transport Studies and Social and Economic History (including Histriography), Science-Technology and Society, Comparative Literature, Literature and Society, Performing Arts, International Economic Co-operation, Money and Finance, Economics of Energy, Policy Sciences and Comparative Ethnography, Education, Planning and Management, Philosophy of Sciences, Social and Political Philosophy.

Interested teachers may contact their own Universities. The universities have been asked to forward the nominations to the University Grants Commission latest by **31st July, 1987.**

davp 823(7)87.

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Physics

1. Ajithkumar, S. *Studies on IR and Raman spectra of crystals.* Kerala, Dr. V. Unnikrishnan Nair.

2. Chamaria, Pramod Kumar. *Studies on oscillations in a discharge tube.* HS Gour. Dr Gopal Singh.

3. Geetha, V. *Surface oxidation studies of materials.* Kerala. Dr. V.K. Vaidyan.

4. Joy, B.H. Selin. *Comparative study of electromagnetic and electrostatic instabilities in the earth's magnetosphere.* Kerala. Dr. G. Renuka.

5. Mini, S. *Sun and interplanetary medium.* Kerala. Dr. S.R. Prabhakaran Nair.

6. Philip, Daisy. *Vibrational spectroscopic and phase transition studies of crystals.* Kerala. Dr. G. Aruldhas.

7. Rajagopal, P. *Vibrational and phase transition studies of solids.* Kerala. Dr. G. Aruldhas.

8. Ramani, J.C. Jeeja. *Phase transition in solids and solitons.* Kerala. Dr. K.S. Viswanathan.

9. Veena Kumari. S. *Surface oxidation studies of materlals.* Kerala. Dr. V.K. Vaidyan.

Chemistry

1. Agnihotri, Keshav Rai. *Studies in photochemistry of some imines, ketoimines and amides.* Panjab. Prof. S.V. Kessar.

2. Arora, Kanh Singh. *Transport properties of some copper (I) perchlorates in binary solvent mixtures at 250C.* Panjab. Dr. D.S. Gill.

3. Bains, Rajwant. *Synthesis and characterization of transition metal substituted hypervalent compounds.* Panjab. Dr. B.N. Anand.

4. Baraskar, Uttam Kishanrao. *Isolation and synthesis of natural products from medicinal plants.* Shivaji. Dr. R.B. Mane.

5. Beri, Ripla. *Biological studies of some pyrimidine derivatives.* Delhi. Dr. Ramesh Chandra.

6. Daniel, Thomas. *Novel organic intermediates and reactionst.* Shivaji. Dr. N.R. Ayyangar.

7. Dogra Vijay Kumar. *Synthetic studies in pheromones and insecticides.* Panjab. Prof. O.P. Vig and Dr. G.L. Kad.

8 Jayasankar, H. *Study on some lanthanide complexes with certain C and N donar ligands.* Kerala.

9. Miglani, Ashu. *Chemistry of the bromosubstituted acetic acids as fused non-aqueous solvent systems.* Panjab. Dr. J.K. Puri.

10 Sandhu, Arun. *Chemistry of organoselenium and organotellurium compounds*. Panjab. Prof. R.D. Verma and Dr. R.K. Bhasin.

11. Sattar, Abdus. *Synthetic studies in terpenoids and related compounds*. Panjab. Prof. O.P. Vig and Dr. S.S. Beri.

12. Syngal, Meenakshi. *Excess thermodynamic functions of solutions of n-butyl X ether and iso-propyl ether*. Panjab. Dr. S.C. Sharma.

13. Tambe, A.S. *Studies in chromatography*. Shivaji. Dr. N.R. Ayyangar.

Earth Sciences

1. Baghmarai, Narender Hari. *Stratigraphy deformation patterns and metamorphic history of the Aravalli rocks in the Lunawada-Sanjeli Area District. Panchmahals, Gujarat State*. HS Gour. Dr. P.P. Rhode.

2. Baroniya, Rajesh Kumar. *Geology and geohydrological studies in the Pench Valley, District Chhindwara, M.P.* HS Gour. Dr. D.P. Rane.

3. Gupta, Hira Lal. *Environmental impact of collieries (Mining activity) on surface and subsurface water along the Hasdo river*. HS Gour. Prof. S.K. Babu.

4. Maheshwari,Gopal. *Deformation patterns and metamorphic history of the Aravalli rocks around Piplod, District Panchmahal, Gujarat State*. HS Gour. Dr. P.P. Rhode.

5. Pandey, Somesh Kumar. *Structural and strain analysis of ductile shear zones developed in the basement granite near Hirapur District, Sagar, M.P.* HS Gour. Dr. P.P. Rhode

6 Panchal, Ashok Kumar. *Deformation pattern along a segment of the Udaipur-Barwani lineament : South Western part of the Sarara Inlier, Southern Rajasthan*. HS Gour. Dr. P.P. Rhode.

7. Patel, Jainarain. *Hydrogeochemical investigations in Banzar Valley with special reference to base metal exploration*. HS Gour. Dr. J.P Srivastava.

8. Sharma, Prabhakar. *Mineralographic, geochemical and geomicrobiological studies of low grade sulphide ores with special reference to ore dressing*. HS Gour. Dr. J.P. Srivastava.

9. Singhai, Praveen Kumar. *Geology, geohydrological, pedological studies on the Bargi command Area M.P. covered by the left bank canal*. HS Gour. Dr. D.P. Khare.

10 Sudhakar, Chilukuri. *A comparative study of structures, surface and drainage of the geological formations of Madhya Pradesh State*. HS Gour. Dr. S.N. Pandey.

11. Tamrakar, Subodh. *Lithology, sedimentation and depositional environment of the Lameta rocks of Sagar and adjoining areas*. HS Gour. Dr. G.N. Saxena.

12. Tiwari, Rajesh. *Chemical quality of water and heavy metals occurrence in the sediments of the surface drainage of surguja District, M.P. in respect of environmental study*. HS Gour. Prof. S.K. Babu.

Engineering & Technology

1. Jones, V. *Numerical characterization and computer simulation of heat transfer in ablative materials*. Kerala. Dr. K.K. Shukla.

BIOLOGICAL SCIENCES

Microbiology

1. Pajni, Sangeeta. *Cloning and expression of yeast micro* alcohol dehydrogenase. Panjab. Dr. T.K. Roy and Prof. J.K. Gupta.

2. Satpathy, Gitarani. *Effect of malathion, an organophosphorus pesticide, on microbial population, biomass and metabolism in a tropical grassland soil*. Sambalpur. Dr. Niranjan Behera.

Biochemistry

1. Harjit Singh. *Studies on the molecular basis of protein absorption in sucking rat intestine*. Panjab. Dr. Akhtar Mehmood.

2. Singh, Virender Mohan. *Studies on glycosylation of intestinal epithelial tissue in rats: Effect of hormones and undernutrition*. Panjab. Dr. Akhtar Mehmood.

Botany

1. Golhani, Urmila. *Reproductive biological studies of forest tree seeds*. HS Gour. Prof. G.P. Mishra and Dr. Ram Prasad.

2. Guru, Rajesh. *An ecological study of tree plantations of waste lands*. HS Gour. Prof. G.P. Mishra.

3. Jain, Kalyan Kumar. *Weed management in soybean, Glycine max (L) Merrill*. HS Gour. Dr. T.R. Sahu.

4. Mahajan, Amita. *Biochemical studies on toria, Brassica compestris var, toria seed proteins-isolation: Purification and physico-chemical characterization*. Panjab. Dr. (Mrs.) S. Dua.

5. Mathur, Moni. *An ecological study of the algal flora of the river Narmada at Hoshangabad*. HS Gour. Dr. A.D. Adoni and Dr. (Smt.) Nayantara Pathak.

6. Mishra, Sushma. *Ecology of root nodules in grassland*. HS Gour. Prof. G.P. Mishra.

7. Nema, Narayan Prasad. *Growth analysis and photosynthetic efficiency of linseed, Linum usitatissimum L. cultivars*. HS Gour. Dr. S.P. Bajpai and Dr. D.K. Tiwari.

8. Saxena, Gyanender Kumar. *Intra specific competition studies of opium poppy in two dates of sowing*. HS Gour. Prof. K.M. Vyas and Dr. K.B. Nigam.

9. Uniyal, Prem Lal. *Cytotaxonomic studies on the Garhwal Himalayan mosses*. Panjab. Prof. S.S. Kumar.

Zoology

1. Amruthakumari, L. *Studies on the macro-invertebrates associated with algae*. Kerala. Dr. C.M. Aravindan.

2. Azfar Ahmed. *Effect of acetone extracts of some plants and precocene-I on the reproduction and development of Dysdercus koenigii (F)*. Panjab. Dr. S.K. Taneja.

3. Sahi, Jasminder. *Studies in vitro and in vivo on the antihepatotoxic activity of certain herbal drugs*. Panjab. Dr. R.C. Sobti and Prof. S.S. Handa.

4. Sahoo, Lilima. *Eco-toxicity of fluoride pollution on certain biological materials*. Sambalpur. Dr. B.N. Naik.

Medical Science

1. Aghabozorgi, Hooshang. *Synthesis of potent pseudo pelletiering analogs and their pharmacological investigations*. Delhi. Prof. J.S. Qadry.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities.

PHYSICAL SCIENCES

Mathematics

1. Abbas, S. Hassan. *Some problems in mathematical programming*. Bhopal.

2. Engelbert, Teresa. *On triple constructions of P-algebra valuation and complementation in semilattices.* Andhra.

3. Hajra, Rathindranath. *Statistical theory of turbulence related to a derived vector field.* Calcutta.

4. Mahata, Nitai Pada. *Some theoretical problems on the study of elastic waves in layered media.* ISM.

5. Pal, Asimkumar. *Random insertions in trees and related topics.* Calcutta.

6. Sharma, Anil. *Momentum and heat transfer through laminar flows.* Rajasthan.

7. Sharma, Ravi Dutt. *M.H.D. heat transfer.* Rajasthan.

8. Subbarao, S. *Exceptional values of entire and mermographic functions.* Bangalore.

Physics

1. Aminesh Kumar. *Atomic absorption spectrophotometric studies in environment.* Nagpur.

2. Bhakuni, D.S. *Study of fields associated with dyons.* Kumaun.

3. Deuri, Rajlaxmi. *Phase transitions in a class of continuous spin systems, in low dimensions.* NEHU.

4. Hemchandra, K. *X-ray spectroscopic studies of some minerals.* ISM.

5. Jayalakshmi, S. *An investigation on the dielectrical and optical properties of certain plasma polymerised thin films and evaporated V_2O_6 films.* CUST.

6. Sat Narain. *Some studies on the measurement and estimation of solar radiation.* Panjab.

Chemistry

1. Bhakuni, R.S. *Chemical investigation on Cornus, Melochian, Ajuga and Rubus species.* Kumaun.

2. Bose, Jyotirmoy. *Studies on the catalytic control of major atmospheric pollutants.* ISM.

3. Chakrabarti, Amitabha. *Studies on naturally occurring heterocyclic compounds.* Calcutta.

4. Dasgupta, Gopa. *Kinetics of oxidation of some nitrogen and sulphur compounds.* NEHU.

5. Ganesan, P.K. *Studies on linear free energy relationships.* Madurai.

6. Gaur, Buddhi Singh. *Synthesis and structural studies of novel drugs of substituted 1, 5 benzodiazepines and 1, 5-benzothiazepines.* Rajasthan.

7. Ghosh, Harnath. *Studies related to the failure of steels in fertilizer industry.* ISM.

8. Goswami, G.G. *Synthesis and screening of some new heterocyclic fungicides.* Kumaun.

9. Mohril, Anil Govindrao. *Compressibility and volumetric behaviour of aqueous non-electrolytes at low temperatures.* Nagpur.

10. Munmun Kumar. *On heterocyclic compounds.* Calcutta.

11. Pant, P.C. *Metal ligand equilibria of some lanthanones in aqueous—ethanol medium.* Kumaun.

12. Patel, Mahendrakumar Ramanlal. *Studies on starch granules.* Patel.

INDIAN INSTITUTE OF SCIENCE
BANGALORE-560 012
REQUIRES

1. **SENIOR SCIENTIFIC OFFICER** under the COSIST Programme in the Department of Bio-chemisty. (IA/308-24/87).

Qualifications: **Essential**—Ph.D. in Chemical, Physical or Biological Sciences with experience in the application of modern precision instrumentation techniques in Biological Research.

Desirable—Post-doctoral Research experience in developing physical methods of analysis, especially micro methods in areas such as spectroscopy, electrophoresis, chromatography, sedimentation, polarography, etc.

2. **SCIENTIFIC OFFICER** in the Department of Metallurgy (Reserved for Scheduled Caste). (IA/308-23/87).

Qualifications: **Essential**—Master's degree in Electronics Instrumentation.

Desirable: 2 years experience in Electronics Instrumentation and in operation and maintenance of Microprocessor controlled instruments (e.g. SEM, XRD, INSTRON, DSC, Leco Analyser, Mossbauer, etc.).

Experience is relaxable at the discretion of the competent authority.

Emoluments: For Post 1: Rs. 2,965/- p.m. (approx.) in the grade Rs. 1100-1600; and for Pst 2: Rs. 2,123/- p.m. (approx.) in the grade Rs. 700-1300. Grades likely to have upward revision when IV Pay Commission recommendation becomes effective.

Details and prescribed application forms can be obtained on request (separate for each post) along with a self-addressed, Rs. 5.40 stamped envelope of 28 cms. x 18 cms. size **before 16-7-1987**. Requests for Post 1 should also accompany crossed I.P.O. for Rs. 5/- drawn in favour of Registrar, Indian Institute of Science (SC/ST candidates exempted if supported by Caste Certificate from a competent authority). Requests for Post 2 should accompany Caste Certificate from a competent authority.

REGISTRAR

13. Rajur, Sharanappa, Basappa. *Studies in the Indole field: Indole and 3-methylindole derivatives of pharmacological interest.* Karnatak.

14. Sarala Devi, Ch. *Studies on ternary chelates of transition metal ions with picolinic acid N-oxides.* Osmania.

15. Sharma, Devender Kumar. *Determination of some organic compounds of pesticidal importance.* HP.

16. Shashi Lata. *Studies on coordination compounds of niobium (v) and tantalum (v) with some diazine derivatives.* Rajasthan.

17. Shrivastava, Swami Prasad. *Studies of the effect of surface active compounds on the reduction of xoygen at DME in aqueous media specially in cane juice in sugar industry.* Bundelkhand.

18. Subbiah, P. *Studies on the electro-chemistry of organic compounds: Process development in the electroreduction of nitroso and nitro compounds and oxidation of sugars.* Madurai.

19. Sundram, Vasanthi. *Characterisation and utilisation of fly ash.* ISM.

20. Tinabaye, A. *Studies on the chemistry of lichen and some plant constituents and some synthetic experiments.* Madurai.

21. Varshney, Madhu. *A study of chemical constituents from medicinal plants of Bundelkhand region.* Bundelkhand.

22. Vijayan, K.K. *Synthetic studies in oxygen heterocyclics.* Calicut.

Geology

1. Anbalagan, R. *Geotechnical study and environmental appraisal of some water resource development projects in Kumaun Himalaya, U.P.* Kumaun.

2. Bastani Allahabadi, Bahram H. *Miliolite rocks of Kutch, their geology and depositional significance.* Baroda.

3. Garhia, S.S. *Geology of Talla Champhi Debguru Area with special reference to petrological and geomorphological studies.* Kumaun.

4. Majumdar, Subir. *Stratigraphy and structure of iron ore group rocks around Gua area, Singhbhum District, Bihar.* ISM.

5. Nagaria, Prabhat Kumar. *Tectonics and geotechnical investigations at Bansagarh Dam Project, Shahdol District, Madhya Pradesh.* ISM.

6. Reddy, C.R. *Geological studies on lead mineralisation at Bandala Mottu agiguladala mineralised belt, Andhra Pradesh, India.* ISM.

7. Sen, Amit Kumar. *Geology of the alkaline ultramafic carbonatite complex and associated mineralisation in the Sung Valley, Khasi and Jaintia Hills, Meghalaya.* ISM.

8. Sukumar, G. Samuel. *Stratigraphy, sedimentation and associated mineral deposits near Guddapeh Town.* Osmania.

Engineering

1. Anjaiah, Bommanaveni. *Some new theoretical techniques of synthesis of digital and analog filters.* Osmania.

2. Bose, Ashim Kumar. *Studies on dewatering characteristics of flotation tailings from Barora washery.* ISM.

3. Chandrasekaran, S. *Some studies on the effect of abrasive contaminants in lubricants on scuffing using a four ball machine.* IIT, New Delhi.

4. Panneerselvam, R. *Algorithmic grouping of operation sequences as an aid to cellular manufacturing system.* Anna.

5. Ramanujam, M. *Kothanda. New approaches to solve linear programming problems.* Anna.

6. Venugopal, R. *Studies on green pelletisation, characteristic of manganese and pyritiferous shales.* ISM.

INDIAN INSTITUTE OF SCIENCE
BANGALORE-560 012
REQUIRES

1. ASSISTANT PROFESSOR in the Department of Civil Engineering (IA/308-25/87)

Essential : (a) Bachelor's Degree in Civil Engineering with a Ph.D. with specialisation in any of the areas : (i) Concrete Structures; (ii) Steel Structures; (iii) Solid Mechanics; (iv) Structural Dynamics; (v) Computer-aided design. (b) Minimum 3 years post-doctoral experience in research/research and teaching/research and design.

Desirable : Experience in research guidance and developmental work. Publications in reputed journals.

2. LECTURER in the Department of **Mechanical Engineering.** (IA/308-27/87)

Essential : Ph.D. in Engineering with specialisation in Tribology.

Desirable : 2 years experience in experimental research in Tribology.

3. SCIENTIFIC OFFICER in Instrumentation & Services Unit (IA/308-26/87)

Essential : M.E./M.Tech with one year experience in analytical instrumentation such as X-ray instrumentation OR M.Sc. with publication record comparable to the work required for Ph.D. degree and three years experience in the above areas.

Desirable : Practical knowledge of design and operation of sophisticated crystallographic equipment such as single crystal diffractometers. Experience in teaching/laboratory courses and computer programming.

4. SCIENTIFIC OFFICER in the Department of **Mechanical Engineering** (IA/308-28/87)

Essential : Master's degree in Mechanical Engg. specialising in turbomachine.

Desirable : Minimum 2 years experience in measurement and analysis of turbomachine flows.

Emoluments : Post 1 : Rs. 3,075/- p.m. (approx.) in the scale Rs. 1200-1,900; Post 2 : Rs. 2,123/- p.m. (approx.) in the scale Rs. 700-1600; Posts 3 & 4: Rs. 2,123/- p.m. (approx.) in the scale Rs. 700-1300. Grades likely to have upward revision when IV Pay Commission recommendations become effective.

Details and prescribed application forms can be obtained on request (separate for each post) accompanied by a crossed I.P.O. for Rs. 5/- drawn in favour of the Registrar, Indian Institute of Science (free for SC/ST on production of Caste/Tribe certificate from a competent authority) along with a self-addressed, Rs. 5.40 stamped envelope of 28 x 18 cms. size **on or before 22nd July '87.**

REGISTRAR

MADURAI KAMARAJ UNIVERSITY

MADURAI-625 021

ADMISSION TO M.Sc. COMPUTER SCIENCE (COMPUTER SOFTWARE) COURSE—1987-89

(Sponsored by the Defence Research & Development Organisation)

Advt. No. R/24/87

Dated : 19-6-1987

Applications are invited for admission to Master's degree course in Computer Science (Computer Software) (Two year full-time semester pattern) to be conducted in the Madurai Kamaraj University.

Eligibility

Candidates for admission to Master's degree course in Computer Science should have a Bachelors' degree with Major in Mathematics or Physics of this University or any other University recognised by the Syndicate as equivalent thereto. Candidates should have a First class with 65% of marks and above in Part III (major and ancillary).

Those who appeared for their final degree examination in April/May, 1987 may also apply.

Note: CANDIDATES WITH HIGHER QUALIFICATIONS SUCH AS M.Sc. ETC. ARE NOT ELIGIBLE.

Age Limit: Not more than 23 years as on 1st August, 1987.

Requisition for Application and Prospectus

Prospectus and Application forms can be had from the Registrar, Madurai Kamaraj University, Palkalainagar, Madurai-625 021 accompanied by a State Bank of India challan for Rs. 50/- remitted into Account No. 1 of Madurai Kamaraj University OR a Demand Draft for Rs. 50/- drawn in favour of The Registrar, Madurai Kamaraj University, payable at Madurai.

POSTAL ORDERS, MONEY ORDERS AND CHEQUES WILL NOT BE ACCEPTED.

An entrance test will be conducted on Saturday, the 1st August, 1987. There will also be an interview. The admission to the course will be based on the academic record in the B.Sc., the results of the entrance test and the interview. The candidates will be called for interview based on performance in the entrance test and in the qualifying examination; and the University reserves itself the right to decide in this regard. The date and place of entrance test and personal interview will be intimated to the candidates by post. Candidates shall appear for entrance test and the interview at their own cost.

Financial Assistance: Selected candidates will be given a monthly financial assistance subject to an undertaking to serve the Defence Research & Development Organisation for a period of five years at the end of successful completion of this degree.

LAST DATE FOR ISSUE OF APPLICATION FORMS	:	**13-7-1987.**
LAST DATE FOR RECEIPT OF FILLED IN APPLICATIONS	:	**20-7-1987.**

Late applications will not be accepted. The University is not responsible for any delay or loss in postal transit.

The entrance test will be conducted at Madurai, Madras and Bangalore.

P. P. Chinnadurai
REGISTRAR

PANJAB UNIVERSITY

CHANDIGARH

(Advertisement No. 4/87)

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, alongwith postal orders of Rs. 10/- by **25-7-1987.** Fourteen days extra time is permissible to persons who have to submit their applications from abroad.

1. **Professors :** (Rs. 1500-60-1800-100-2000-125/2-2500).
   Mathematics—2.
2. **Readers** (Rs. 1200-50-1300-60-1900).
   Mathematics—4.
3. **Lecturers :** (Rs. 700-40-1100-50-1600).
   Mathematics—3.
4. **Research Assistant :** (Rs. 550-20-650-25-750).
   Mathematics—1.
5. **Research Associate**
   Centre for Advanced Study in Mathematics—1.
   Category A : Rs. 1400/- p.m. (fixed).
   Category B : Rs. 1600/- p.m. (fixed).
   Category C : Rs. 1800/- p.m. (fixed).
   Category D : Rs. 2000/- p.m. (fixed).
6. **Research Fellows :** (Rs. 800/950/1000/- p.m. fixed), with annual contingent grant of Rs. 3,000/-).
   Centre for Advanced Study in Mathematics—4.
7. **Research Fellow :** (Rs. 950/- p.m. (fixed).
   Mathematics—1. (Department of Mathematics).

Note:
1. The Vice-Chancellor could place before the Selection Committee names of suitable persons for its consideration alongwith the applications received in response to the advertisement.
2. It is not obligatory on the part of the University to call for interview every candidate who possesses the essential qualifications.
3. The number of vacancies may change.
4. The University may also prepare panels of suitable people for appointment against vacancies occurring within a specified period.

Detailed instructions, specialisations, various allocations and reservations concerning the various posts and other details are available with the application forms. These can be obtained from the Cashier, Panjab University, Chandigarh personally on payment of Rs. 2/- or by making a written request to the Deputy Registrar (Estt.), Panjab University, Chandigarh, accompanied by self-addressed stamped (worth Rs. 3.40) envelope of 23 x 10 cms and postal order of Rs. 2/- drawn in favour of the Registrar, Panjab University, Chandigarh.

THE UNIVERSITY OF BURDWAN

RAJBATIB: URDWAN
WEST BENGAL
Advertisement No' 1/87-88
Dated : June 23, 1987

Applications in the prescribed form are invited for the following posts in the approved scale of pay (Deputy Controller of Examinations and Deputy Inspector of Colleges : Rs. 1200-50-1300-60-1900/- and Assistant Librarian : Rs. 700-40-1100-50-1600/-). The posts carry dearness and other allowances, and pensionary benefits according to the Statutes of the University.

A. **Deputy Controller of Examinations** —One Post.

B. **Deputy Inspector of Colleges** —One Post.

C. **Assistant Librarian** —One post.

Educational Qualifications and Experience for A & B

(a) **Essential**

(i) Uniformly good academic record with a B+Master's Degree or its equivalent.

(ii) At least 10 years' experience in a position involving supervision, control and planning of Examinations, administration of Colleges or in an Institute of Higher Learning or Government or other academic bodies. At least 5 years of the 10 years' experience should be in higher position of high level administration.

(iii) Age not less than 35 years. Relaxable in case of exceptionally qualified candidates.

(b) **Desireable**

(i) A Doctorate Degree or published paper of high standard. **OR**

(ii) Experience of at least 10 years in a fairly senior position in any academic Institution like a College or a University or a research organisation.

(iii) For Deputy Controller of Examinations it is essential to have experience of at least 3 years in conducting of examinations in either Under-graduate teaching Institution or equivalent.

Educational Qualification and Experience for C:

(a) **Essential**

(i) Uniformly good academic record with a B+Master's Degree with a Bachelor's Degree in Library Science or a Master's Degree in Library Science.

(ii) Age not below 30 years. Relaxable in the case of exceptionally qualified candidates.

(b) **Desirable**

At least 7 years' experience in a recognised Library preferably belonging to University or an Institute of Higher Learning.

The choice of the Selection Committee may not necessarily be confined to those who apply formally.

In the absence of suitable candidates having the required administrative experience, the essential qualification pertaining to administrative experiences required for the posts may be relaxed or waived on the recommendations of the Selection Committee.

For application form and other information, apply to the Registrar, University of Burdwan, Rajbati, Burdwan with a Self-addressed Stamped (Re. 1/-) envelope (9" x 4").

Last date for submission of application with the requisite fee of Rs. 5/- is **July 31, 1987.**

P. Banerjee
REGISTRAR

CENTRAL INSTITUTE OF ENGLISH AND FOREIGN LANGUAGES

HYDERABAD - 500 007
Advertisement No. V/87

Applications on prescribed form are invited for the post of **Co-ordinator,** EMRC in the Institute service in the scale of pay of Rs. 1500-60-1800-100-2000-125/2-2500 (pre-revised) so as to reach the undersigned on or before **31-7-1987.**

Qualifications

Essential

An eminent scholar with published work of high quality actively engaged in research. About ten years' experience of teaching and/or research. Experience of guiding research at Doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Desirable

Preference will be given to a person who has a formal qualification in Educational Technology/Distance Education/Materials Production/Curriculum Development/Journalism/Communication Studies etc. and has the experience of producing Radio & T.V. Programmes.

Prescribed application form and further details can be had from the Registrar, Central Institute of English and Foreign Languages, Hyderabad-500 007 by sending a postal order for Rs. 2/- (Ps. 0.50 for SC/ST candidates) with a self-addressed envelope (10 x 20 cm.) duly stamped (Rs. 1.30 ps.).

K. Jayashankar
REGISTRAR

S.N.D.T. Women's University

1, Nathibai Thackersey Road, Bombay-400 020

Advertisement No. 3

Dated: June 20, 1987

Applications are invited in the prescribed forms available at the University Office between 10.30 a.m. to 2.30 p.m. from Monday to Friday and 10.30 a.m. to 12.00 noon on Saturday, on payment of Rs. 5/- (M.O./Indian Postal Order/in Cash) for the following posts, to be filled in at the University Departments and its conducted Institutions at Bombay and Poona, so as to reach the undersigned on or before **fifteen days** from the date of its advertisement.

Sr. No. of Post	Post and Name of the Dept./Institution	No. of Post	Post under Reserved Category	Medium of Teaching
A.	**P.G. Dept. of Communication Media for Children at SNDT College of Home Science, Poona.**			
1.	Cameraman	ONE TEMP	—	—
2.	Sound Recordist	ONE TEMP	—	—
3.	Maintenance Engineer (Asstt. Engineer)	ONE TEMP	—	—
4.	Sr. Technician	ONE TEMP	—	—
*5.	Laboratory Assistant	TWO TEMP	ONE	—
B.	**P.G. Dept. of Home Science at SNDT College of Home Science, Poona.**			
1.	Reader in Any Area of Home Science	One	—	— MAR/ENG
C.	**SNDT College of Education for Women, Poona**			
1.	Lecturer in Education (Science & Maths)	ONE	—	ENG/MAR
D.	**SNDT Women's University Library, Extn. Library Juhu Campus, Bombay-49**			
1.	Dy. Librarian	ONE	—	—
E.	**P.G. Dept. of Child Development at SVT College of Home Science, Bombay** (Under Lab of Child Development)			
1.	Nursery School Teacher	ONE PART TIME TEMP		ENG
F.	**P.G. Dept. of Foods & Nutrition** (under DRS Programme) **at SVT College of Home Science, Bombay** up to June 30, 1988			
1.	Research Associate	ONE TEMP	—	ENG
G.	**SVT College of Home Science** (Under Graduate Level) **Bombay**			
1.	Lecturer in Foods & Nutrition	ONE	—	ENG
2.	Lecturer in Science (Physics & Chemistry)	ONE	—	ENG

Sr. No. of Post	Post and Name of the Dept./Institution	No. of Post	Post under Reserved Category	Medium of Teaching
H.	**P.G. Dept. of Gujarati, SNDT Women's University, Bombay**			
1.	Reader in Gujarati	ONE TEMP	—	GUJ
	Under Special Assistant DSA Scheme			
2.	Reader in Gujarati	ONE	—	GUJ/HIN
3.	Lecturer in Gujarati	ONE	—	GUJ
I.	**L.T. College of Nursing, Bombay-20**			
*1.	Staff Nurse	FIVE	ONE	—
J.	**P.V. Polytechnic, Bombay** (For Diploma Course in Electronics)			
*1.	Laboratory Asst-Cum-Storekeeper	TWO	ONE	ENG
2.	Lecturer in Electronics	ONE	—	ENG
—	**Dept. of Ophthalmic Technology**			
3.	Instructor in Optometry	ONE	—	ENG
K.	**Computer Centre of SNDT Women's University**			
1.	System Manager	ONE TEMP	—	ENG
L.	**Research Centre on Women's Studies** (Under Rural Development Programme)			
1.	Asst. Director (upto 31-3-1990)	ONE TEMP TENURE	—	—
M.	**SNDT Women's University Library, Bombay-20** (Under Information Centre)			
1.	System Analyst (Up to March 31, 1990)	ONE TEMP TENURE	—	—
2.	Computer Data Entry Asst.	ONE TEMP TENURE	—	—
3.	Research Assistant	ONE TEMP TENURE	—	—
N.	**Dept. of Special Education, Bombay-49** (Under Extn. Programme)			
1.	Co-Ordinator	ONE	—	ENG
O.	**SNDT Women's University Bombay and its Institutions**			
1.	Jr. Stenographer	ONE	—	—
*2.	Clerk	THREE	ONE	—
*3.	Peon	ONE	ONE	—
P.	**SNDT College of Home Science, Poona**			
1.	Lecturer in Child Development	ONE PERM ONE TEMP	—	ENG/MAR ENG/MAR
2.	Lecturer in Family Resource Management	ONE TEMP ONE HALF TIME TEMP	—	ENG/MAR ENG/MAR
3.	Lecturer in Textiles & Clothing	ONE PERM ONE TEMP HALF TIME	— —	ENG/MAR ENG/MAR
4.	Lecturer in Foods & Nutrition	ONE TEMP	—	ENG/MAR
5.	Lecturer in Education & Extension	ONE TEMP HALF TIME	—	ENG/MAR

Minimum qualifications, salary scales, etc. of the post of teachers are as per approved UGC scales and qualifications. Applications of Scheduled Castes/Tribes/Other Nomadic Tribes, will be considered as per Government directives.

*Indicates post under reserved category and will be filled by SC/ST/ONT candidates only.

Dr. (Smt.) Usha Thakkar
REGISTRAR

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055. Tel. 529157

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NEWS

VOL. XXV JULY 13
No. 28 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor:
SUTINDER SINGH

Humanities and the Need for Documentation

L. S. Ramaiah*

Prakruti and *Purusha* are two important elements in the universe. *Prakruti* contains all secrets and *Purusha* with his brain goes on unravelling these secrets. The human brain in its process of unravelling the secrets of nature has created the universe of knowledge. The archipelago of human knowledge consists of arts and humanities, social sciences and sciences. Archaeology of human knowledge reveals that the artistic and humanistic studies have the longest and oldest tradition with refulgent history of their own. The basis of all knowledge, either in humanities or other sciences is imagination, intuition and vision. Imagination is the most extraordinary thing and is the forerunner of all invention and artistic creation. Imagination has both the elements of reason and intuition. The lack of imagination sounds the death knell, both for humanities and sciences. Imagination, therefore, is the basis for scientific hypothesis, social prediction and artistic creation. Imagination is abundantly found in the humanistic studies. The imaginative studies like scientific fiction and utopia were instrumental sometimes for scientific invention. Bishop Sprat in his *History of the Royal Society* (published in 1667) wrote: "Invention. . . . requires an active, a bold, a nimble, a restless mind. . . . many attempts must be made to no purpose; much treasure must sometimes be scattered without any return; much violence and vigour of thoughts must attend it; some irregularities and excesses must be granted to it that would hardly be pardoned by the severe Rules of Prudence."

The main purpose of Humanities is that of "recovering, preserving and interpreting the cultural heritage of mankind." The Humanities are studies which centre attention on the life of man. The Humanities are considered to constitute a distinct kind of knowledge that is humanistic, that is, which is concerned with human values and expressions of the spirit of man. The definition of Humanities is always a debatable question and they have been defined variously. The enumeration of the disciplines that constitute the Humanities division of the universe of knowledge have been variously stated by various authorities.

I. The U.S. Congress in the law establishing the National Endowment for Humanities states that the term Humanities includes, but is not limited to the study of the following:

1. Languages (both modern and classic);
2. Linguistics;
3. Literature;
4. History;
5. Jurisprudence;
6. Philosophy;
7. Archaeology;
8. Arts (History, Criticism, Theory and Practice of); and
9. Those aspects of social sciences which have humanistic content and employ humanistic methods.

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II. The *Arts and Humanities Citation Index* includes the following disciplines in Arts and Humanities.

1. Architecture;
2. Art;
3. Classics;
4. Dance;
5. Film, TV and Radio;
6. Folklore;
7. History;
8. Linguistics and Philosophy;
9. Literature;
10. Music;
11. Philosophy;
12. Theatre; and
13. Theology and Religious Studies.

III. The University Grants Commission (New Delhi) considers the following subjects as constituting Humanities:

1. Classical Languages;
2. Modern Languages;
3. English and Foreign Languages;
4. Linguistics;
5. Philosophy;
6. History;
7. Art History; and
8. Museology.

As can be seen from the above three practices, the Humanities disciplines have been variously listed. It is also highly debated whether linguistics and history constitute humanities or social sciences. The ICSSR considers linguistics as part of the social sciences. The various aspects of linguistics and history constantly criss-cross and overlap the boundaries of social sciences and humanities. Hence, the definition of Humanities and its boundaries are fuzzy.

For a long time libraries and humanistic studies were regarded as synonymous. Everyone knows that humanistic studies are based on libraries and the scholars in Humanities require large number of books. Further these scholars insist on direct and immediate access t everything they need or think they would need in thei researches. Hence, the libraries constitute the laboratories of the scholars in Humanities.

The later part of the 20th century has witnessed exponential growth of literature, both in humanities and sciences. It is no longer possible for any single library to acquire all the texts or books or documents published all over the world. This has radically changed the position of the scholarship in Humanities also. There is a growing awareness that some thought must be given to humanistic scholarship in general as well as to the institutional means and methods by which it can be supported. Eugene Garfield in his preface to the *Arts and Humanities Citation Index* stated that:

> "(i) The Arts and Humanities, no less than the sciences, need a large scale index that provides multi-disciplinary coverage;
> (ii) An up to date service issued on a current basis and cumulated annually would be welcomed; and
> (iii) There was a widespread belief in the potential effectiveness of citation and title-word indexing in Arts and Humanities information retrieval."

No less than an information scientist like Eugene Garfield justified the need for documentation work in the field of Arts and Humanities. Hence, there is no need over-stressing the point any further.

With the above background, let us view the position of Humanities documentation in India. After Independence in 1947, the Government of India while establishing a chain of research laboratories throughout the length and breadth of the country for scientific research did not neglect Humanities. The Government established Sahitya Akademies, both central and state, Sangeetha Nataka Akademies and other agencies for Humanities. These institutions were meant only to encourage the creative talent. They don't act as documentation centres. Sciences and social sciences have national documentation centres like INSDOC and NASSDOC along with their regional offices whereas Arts and Humanities, even though study and research in these areas in Indian universities and other organisations is considerable, the documentation facilities at national level are negligible. There is no national information/documentation centre for these disciplines which have a very important role to play in the multilingual cultural context of India to-

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EDUCATION IN HUMAN VALUES

A Synoptic View

Satya Pal Ruhela*

> "The most important human endeavour is the striving for morality in our action. Our inner balance and even existence depend on it. Only morality in our actions can give beauty and dignity to life. To make this a living force and bring it to clear consciousness is perhaps the foremost task of education."
> —*Einstein*

'Education in Human Values' is being acclaimed and accepted as a very new, fascinating and promising programme of education not only in India but in over one hundred countries of the West, Africa and South-eastern countries at the instance of India's leading spiritualists like Shri Sathya Sai Baba, Shri Chinmayananda, and the new Education Policy in India. This field seems to have emerged during the last ten years, although we do find that emphasis on value-impregnated education or imparting education in human values was indeed laid by several educationists like Gandhiji, Tagore, Vivekananda, S. Radhakrishnan, Zakir Husain, and several commissions and committees on education in India. As a matter of fact, education in ancient Vedic Indian society was a classic example of an ideal sort of education in human values. Although it is sociologically impossible to revive that brilliant model of value education now in India or in any other country of this strife-torn planet, yet the emerging enthusiasm for education in human values all over the world seems to reassure the humanity that things would indeed change for the better and man will indeed learn to live like man on this planet.

So much is being churned out on this theme these days by several writers, and speakers in seminars, articles, books and lectures that it is becoming rather difficult to have a very clear and comprehensive picture of what exactly is or should be the programme of human values in education which may be understood by all, discussed in all earnestness, improved upon further, if need be, in the context of the socio-cultural milieu of the countries concerned, and implemented as an innovation that must succeed and influence every aspect and every deliberation of education and society.

In this paper, an attempt is made to present a synoptic view of the emerging programme of 'Education in Human Values'.

II

Emergence of the Programme

Several serious societal realities not only in India but in almost every country of the modern world have shaken and impelled conscientious philosophers, educationists, public leaders and spiritual masters to lay stress on the momentous need of imparting education in human values to people, especially to the younger people who would be the citizens of tomorrow. There is a widespread spectrum of kaleidoscopic *anomie* (normlessness), dissension and conflict, misery, corruption, sensuality, falsehood, hypocrisy and degradation of mind, morals and relationships that this world has indeed become a very unhappy and unfortunate abode for man.

Let us see some of the portraits drawn by leading personalities in this context:

Professor V.R. Taneja, has potrayed the dismal picture in these words:

> "Materialism has so engulfed us that every one, by and large, has become a worshiper of Mammon, which rules the roost. The competition for a slice of the pie is fierce and no holds are barred in grabbing as large a slice as possible. All value norms are being cast to the winds in pursuit of pelf and power.
>
> ...Even the intellectuals have either retreated in isolation or act as hirelings.

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> ...The universities and colleges are riven by petty factionalism. Emotion claims precedence over reason. The common man is groaning under the weight of rampant corruption. The crime is on the increase. The designs of selfishness, exploitation and hypocrisy are common phenomena. We are in the grip of narrow sectarianism, regionalism and fanaticism. Man may have conquered the moon but has failed in the conquest of mind."

According to Professor N. Vedamani Manuel:

> "Today our social life is eaten up with unresolved tensions, conflicts and violence.
>
> The worship of false values and false heroes has assumed such great importance today that there is no wonder that serious students of the rising generation feel lost in a mass of contradictions and confusion. . . . We are today a witness to honouring corrupt politicians, irresponsible businessmen, dishonest demagogues, self-seekers, drunkards and moral wrecks as models of perfection to copy from. Contradiction is the order of the day.
>
> ...A double moral standard is the reality which is no healthy setting for decent pupil growth.
>
> ...Reality does not seem to them (youth) to reflect the values taught in the books. It puzzles them to find why if values are so important to life and living, they are not reflected in the life of most people in society. Are values a myth to dupe the young into silence?
>
> ...Man has become an economic animal in the technological society without developing the finer feelings of the spirit.
>
> ...The entertainment media creates in the minds of children and youth the attitudes of violence, crime, fear and sex. . . . The dominant philosophy of mass media is sensationalism and the glorification superficial values. In many cases it is a case of mental pollution."

In the words of Professor D.S. Kothari, the distinguished physical scientist and chairman of the Education Commission (1964-66):

> "Science and technology are exploding but wisdom is imploding. It is shrinking. Knowledge is expanding and human personality shrinking. Because of the explosion of knowledge and implosion of wisdom, we find various kinds of grave aberations, imbalances, calamities. There is explosion of violence in diverse forms. Greed, Hatred and Delusion form a rapidly rising spiral; the GHD spiral. So on the one hand, we have the exponentially rising, growing spiral of Science, Technology and Productivity—the STP spiral, and on the other hand we have the GHD Spiral.
>
> Globally speaking, the military expenditure every minute is more than a million dollars (Rupees one crore) to fuel the Greed-Hatred-Delusion spiral. Every minute more than a million dollars are spent to make the world a *worse* place than what it was a minute before—less a security and not more. That is the tragedy of the human situation. More than half the total number of scientists and engineers are working on weapons of destruction to make the world *worse* and not better."

World renowned Spiritual Master Bhagvan Sri Sathya Sri Baba , who has launched a world-wide unique and bold programme of Education in Human values now flourishing in 105 countries of the West, Africa and East, has given the following rationale for it:

"Chivalry of speech has increased;
Chivalry of deed has disappeared;
Life is laden with false vanities;
Money has become our God;
Pride has become our creed;
Selfishness sits supreme in *Buddhi's* seat;
Egotism has become our fashion;
Greed has become our beauty;
Dharma has come to nought;,
Compassion has sunk low;
Moral fervour is lost;
Hypocrisy has become the light of our life;
Love and kindness lie sick and diseased;
Modern education has blinded men with lust;
Life has become a burden;
Minds have gone astray.
Delay no more for delay is disastrous;
Fuse morality with education in sweet harmony;
....".

While delivering the Benediction Address at the Fifth Convocation of Sri Sathya Sai Institute of Higher Learning, on November 22, 1986, Shri Sathya Sai Baba, the Chancellor of the Institute, diagnosed the pulse of the gravely sick contemporary mankind asunder:

> "...Science and technology have expanded vastly today. Their gifts have made life more comfortable and peasant. But they have brought with them grief, loss and calamity in far greater degree. More than all, they have bred domination and

concentration of authority. . . . . The emergence of discordant notes has silenced the call of the divine from within man. He is eager to make his life a merry-go-round but it is turning into a painful tangle of troubles. He does not try to discover the cause of this contradiction. . . . He is restless and has to encounter countless worries. Fear of imminent war or famine has gripped man. Fear while alone at home, fear while on the street! When insecurity prevails, how can man be happy?

...Man has become so stupid that he has neither fear of sin, nor love for God. How can then he be secure in peace and escape from catastrophe?"

The National Policy on Education-1986 document has given the following justification for value education:

"8.4 The growing concern over the erosion of essential values and an increasing cynicism in society has brought to focus the need for readjustment in the curriculum in order to make education a forceful tool for the cultivation of social and moral values.

8.5 In our culturally plural society, education should foster universal and eternal values, oriented towards the unity and integration of our people. Such value education should help eliminate obscurantism, religious fanaticism, violence, superstition and fatalism.

8.6. Apart from this combative role, value education has a profound positive content, based on our heritage, national goals and universal perceptions. It should lay primary emphasis on this aspect."

III

What are Human Values ?

Oxford English Dictionary defines value as "worth, utility, desirability, and the qualities on which these depend." Philosopher R.B. Percy defines value as "an object of interest to someone, for it emanates from particular relation between the interest and its object." Since values, in order to be of any worth, have to depend upon conduct for their actualization, one can define value as "that goal which is worthwhile and the pursuit of which has conducive effect on life." Eminent sociologist Prof. R.K. Mukherjee defined values as "socially approved desires and goals that are internalized through the process of conditioning, learning or socialization and that become subjective preferences, standards and aspirations." This is a very convincing definition.

There are three views about the nature of values:

(i) SUBJECTIVE VIEW: According to this view, desire, liking, interest, striving, volition, act and satisfaction constitute the multiplicity of factors upon which values depend. Values are said to be the functions of these states in the personal life of the subject and are intrinsically bound up with his experience.

(ii) OBJECTIVE VIEW: Values are independent of the valuer and they reside in the object (not in the subject), just as truly as do colour, smell, temperature, size and shape, etc. Plato, Aristotle, R.B. Perry, etc. held this view.

(iii) RELATIVISTIC VIEW: Relativistic thinkers regard values as the relation between a valuing human being and his environment. Value is also taken to be partly feeling and partly reason. The feeling part is hedonistic and the reason part is regulative. Thus, value is considered as a meeting ground of the regulative and constitutive principles.

In fact, the nature of values cannot be understood completely in the absence of these three characteristics, which are different yet essentially part of the same phenomenon. Therefore, all these three viewpoints are to be considered while understanding the nature of values.

Values have been classified as physical values, mental values, emotional values, social values, intellectual values, political values, economic values, aesthetic values, moral values, religious values, cultural values and spiritual values. Values have also been classified as (a) universal, eternal, absolute or root values like truth, love, peace; and (b) temporal or mundane values which include contexual values—social, cultural, economic etc.

All these are human values since they are all good things and they are concerned with the human society in some way or the other. Of course, as many them as can be aimed at and made use of, should be fostered by education. But to avoid confusion arising out of the impatience and waywardness in making efforts to translate such a tall order into a practical reality, it is desirable to concentrate on some specific and broad areas of values while launching any meaningful programme of Education in Human Values.

It is in this context that Sri Sathya Sai Baba has preferred to emphasize these five pillars of his worldwide programme of Education in Human Values—

Satya (Truth); *Dharma* (Right conduct); *Shanti* (Peace); *Prema* (Love); and *Ahimsa* (Non-violence).

Baba's educational programme seeks to promote these five broad universal values, and in these broad values are subsumed several other important values like service to people, cooperation, cleanliness, prayer, simple living and high thinking, etc. is educational programme is universalistic in nature; it combines spirituality with science, national integration with universal brotherhood, present with the past glory and future aspirations of mankind. These programmes are truly secular in the sense that all religions are respected equally.

The Ramakrishna Mission institutions throughout the country have also been keenly interested in the programme of education in human values. Influenced as they have greatly been by the pragmatic and nationalist teachings of Vivekananda, their guiding spirit, they have been greatly emphasising social service, universal brotherhood, growth of human personality and rational ethical code. "What our nation needs today", says Swami Ranganathananda, President of Sri Ramakrishna Math, Hyderabad, "is a pervasive concern for man as man, and not as cut up into castes, sects, and communities, and the formulation of a sanction for the same from a rational ethics and spirituality."

The Chinmayananda Mission has also been emphasising the universal values of truth, right conduct, peace and love. The educational institutions of Sikhs, Jains, Muslims, Christians, Arya Samajis etc. have been emphasising the feelings or values of their particular religions, and in their programmes their denominational rituals, beliefs and teachings of their religious leaders are predominantly reflected.

Ever since, the Prime Minister emphasised the need of a functional value education in his January 5, 1985 address to the nation, after getting a massive mandate, and in particular mentioned the need of "waging an ideological battle against communalism and fanaticism in our schools and universities, in our work places and in our media", promotion of "national cohesion and work ethics" and the need of acquainting "the younger generations with India's ancient heritage and culture", there has been a great deal of enthusiasm and hectic activity in the Union Ministry of Human Resource Development to come out with a functional programme of education in human values. The National Council of Educational Research and Training (NCERT) and the National Council for Teacher Education (NCTE)—the two technical wings of the Ministry, have been trying to spread it through its seminars, conferences and publications. The *Programme of Action* document does not say anything about value education, about which the 'National Policy on Education—1986' emphasised its need under paras 8.4—8.6 mentioned above. While this shows that in reality the Government of India has so far not been able to evolve a concrete or practical programme of Education in Human Values, we may infer from the various points of emphasis made by the Government during the last two years that the most cherished human values which I think, the Government of India seems to be keen to promote through education are Secularism, Social Justice, Freedom, Social Mobility, Scienticism, Respect for the ecology and preservation of ecological balance, small and happy family norm; Respect for the cultural traditions of India, Modernism, and Fighting superstition and fanatacism.

In my assessment, the Govt. of India's scheme of Education in Human Values, which is still in a nabulous form, considerably lacks that unique imprint of universal values of Truth, Right Conduct, Peace, Love, Ahimsa, Equality of Religions, Search for the Spirituality, and aesthetic which the Sathya Sai Programme of Education possess; it considerably lacks in the strong component of service, pervasive concern for man as man, and rational ethics and spirituality in action which Ramakrishna Mission's programme possesses. It does not seems to be inspired by the pious and truly great ideas about value education given by the UNESCO's epoch-making document Learning To be (1972), such as : rejection of preconceived, subjective or abstract ideas of man, command of scientific thought and language, self-control, ethical training, creativity, social commitment, and learning uneasing in order to survive and evolve. It also seems to be lacking in its emphasis on educating people about the grave threats of pollution, nuclear armament, international conflicts and unplanned future. We can only hope and pray that our educational policy makers and its executors shall, instead of keeping on harping on the superficial and catchy slogans and praising our past all the time, wake up and give the nation a truly balanced and really functional pragramme of education in human values so that we may not have to meet shocks, jerks, frustrations and defeats in our future in the 21st century. Not only have we to emerge as a nation, but we have to give spiritual, political and intellectual leadership to the other nations of the world.

IV

Imparting Education in Human Values

There has been a whole lot of debate on the various practical aspect of value education in philosophical and educational circles throughout the world, and some widely accepted decisions are before us. Let us hurriedly take note of them. 'Education in Human Values' has not to be taught as a separate, compulsory or optional subject in the school curriculum by a separate teacher specialising in it. It has not to be taught at a given or fixed period earmaked as "Value Education" or "Moral Education" period. It has not to be taught in the manner Economics or Political Science is taught in many schools giving high flown lectures, dictating important notes and examining through a written question paper in the end. Also it has not to be treated lightly or frivolously as we find many socalled SUPW (Socially Useful Productive Work) activities are being taught in most of the Indian schools throughout the country by non-serious, uncommitted, disgruntled and unsupervised teachers. It has not to be imparted in only schools; the colleges, universities, non-formal educational institutions, vocational, technical and research institutions—all these have to come under its sway. It has not to be fossilised into a study of certain religious prayers, mantras, sutras and adventures and tales of certain mythological characters and saints. It has to be a living science of man-making combining in itself all the functionally useful elements of spirituality, science, technology, social work, ethics, modernism, futurology, ecology, disarmament, internationalism, and scientific humanism. All teachers and all educated parents and other citizens are expected to contribute their very best in imparting education in human values to whosoever comes in their contact—students, students' parents, employees, workers, friends, neighbours. Their sole effort has to be directed towards the two-fold task of inculcating right attitudes from the beginning and transforming wrong attitudes (once formed) into right attitudes through the numerous techniques such as the following:

1. Precept-ideal method
2. Influencing technique
3. Identification method
4. Association method
5. Ventilation method
6. Interview method
7. Story-telling method
8. Parable method
9. Psycho-drama method
10. Role-playing method.

Professor Kireet Joshi in his brilliant paper "An Outline Programme of Value-Oriented Education" has rightly presented the crux of the matter in these poignant words: "The secret of teaching values is to inspire and kindle the quest among the students by means of one's own example of character and mastery of knowledge. It is by embodying values within ourselves that we can really radiate values to our students. Value-oriented education should not be conceived as an enunciation of a series of "do's" and "don'ts".

V

Universities' Involvement in Education in Human Values?

The Vice-Chancellors' Conference on 'Value-orientation in Higher Education' held in the Rajasthan University, Jaipur (December 5-8, 1984) deliberated on the role the universities can play in the promotion of proper human values. Prof. T.K.N. Unnithan, the host Vice-Chancellor in his welcome address recalled the pertinent words of the eminent Indian sociologist Prof. Radha Kamal Mukerjee:

> "The universities are the nurseries of the values and ideals of life in every country. Without values and ideals the university with its hundred classrooms, laboratories and museums remain but an impressive scaffolding, not an edifice of civilization."

Dr. Zakir Husain had also expressed similar feelings several years ago:

> "From a place of transmission of information the university should make itself a place of producing intellectual work, generating habits of systematic, methodical thinking, readiness for self-examination and self-criticism, and allegiance to absolute values, making clear the way for the development of a free moral personality. For a free moral personality is, in my view, the proud product of a sound education."

Professor T.K.N. Unnithan had rightly pointed out "The question is no more whether value orientation in higher education is desirable. The question is how to make higher education value-oriented: what are the concrete and effective steps that we can envisage in a value-oriented education in our universities?"

The question "Is there any hope of our universities' honest involvement in the programme of education in human values" comes in between the two questions posed by Professor Unnithan. What are the social realities of our universities, and in the context of those realities can our universities honestly claim to have any moral right to take up this challenging task? The question of how would come later.

In the same conference, the President of India, Giani Zail Singh, in his inaugural address had lamented, and rightly so, asunder:

> "In the present situation, there is hardly any Vice-Chancellor who is free to work independently, honestly and conscientiously. At every step obstacles are placed before them which hamper the sound and efficient functioning of Universities as institutions of learning."

The Chancellor of the Rajasthan University, Mr.

O.P. Mehra had said:

> "..It is deplorable that a young scholar joins university as a teacher without any training...Recruitments based on regional considerations run counter to the national integration...Inbreeding in universities is instrumental in the lowering of teaching and academic standards."

We firmly believe that unless teachers of universities and colleges are made to subscribe to the concept of social accountability of their work and conduct, there is little hope that our institutions of higher education shall in earnestness be able to contribute anything concrete in the direction of value education. Luckily, a unique model university-level institution in the form of Sri Sathya Sai Institute of Higher Learning, Prasanthinilayam (Andhra Pradesh) is now emerging, which will inspire and guide all other universities and colleges not only in India but in the whole world as to how integral education "which leads man to strive for perfection in the physical, intellectual, emotional, psychic parts of one's personality" can ideally be imparted. □

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day. Such a centre at the national level is required to keep the diverse elements of Indian scenario in harmony. This centre can:

(1) bring fusion and understanding between various Indian languages and literatures; and
(2) achieve national integration through assimilating the multilingual multicultural elements into a harmonious unity.

Many people may argue that the National Library itself is the agency to cater to the needs of scholars in Humanities. The National Library in India is not adequate and it has been in doldrums for the last one decade. Further, the same argument will be valid even in the case of the social sciences. Therefore, it is time that a national centre for Arts and Humanities with various sub-centres for various disciplines that constitute it should be thought of and organised into a network to provide various documentation services to the scholars in Humanities. This negligence brooks no further delay. As for the structure and functions of the National Humanities Documentation Centre, attention is drawn to my paper published in the **University News**, February 2, 1987.

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An Irreconcilable Contradiction ?

"Is there an irreconcilable contradiction between the traditional idea of the university and the demands on it being increasingly made by society today?" was the question posed by Mr. K.R. Narayanan, Hon'ble Minister of State for Science and Technology, Government of India, while delivering the Convocation Address at the Sixty Seventh Convocation of the University of Mysore. In this scintilating address, he himself offered the answer as a big bold 'NO'. Excerpts :

India, as we all know, is a land where the human mind has soared to incredible heights of thought and philosophy and plumbed the unfathomable depths of the mind and soul of man. It is here in this land that perhaps the first fundamental questions were asked of the origin and the nature of the universe and of the predicament of mankind. The tradition of the pursuit of knowledge was therefore long established, and learning was held in high respect and rewarded, be it in gurukulas, ashramas, viswavidyalayas or in exceptional individuals. However, knowledge in this elevated form was the preserve of a creative minority at the uppermost layer of society though a few from below often managed to slip to the top through the meshes of the social network. To the vast majority of the people who remained outside the privileged sphere, religious and philosophical concepts, and knowledge in general, were purveyed in drastically, though beautifully simplified forms through mythologies, rituals and popular literature that captured the emotions and imagination of the masses. It was a magnificent feat of popularisation and communication on a grand scale which could arouse the envy of modern informatics with all its electronic equipment and gadgetry. The fact, however, remains that there was in this golden age of ours a yawning gap in knowledge or in education, to use modern parlance, between a small minority on the top and the immense majority below and all around. Even in respect of the basic instrument of education and communication, viz., language, a gap existed in the sense that Sanskrit with all its literary and philosophical treasures was not the tongue of the common people.

This situation prevailed almost throughout history as far as the all-India level was concerned, though the upper class language changed from Sanskrit to Persian and then to English. During the long period of British rule a new chasm came into being between the English educated and the rest of the people with the modernised sections of the semi-feudal society and the new industrial bourgeoisie and intelligentsia at the head of the social and administrative power-structure and the masses. Although there was a greater degree of social mobility in this system, basically the wide gap between the educated and the custodians of knowledge on the one hand, and the illiterate masses on the other remained almost superimposed on the caste, social hierarchies and inequalities of the older order. Universities and educational establishments of the modern kind were, in fact, though not in law and theory, institutions standing quite apart from the generality of the people, notwithstanding the filtration process associated with the new education. Even to-day the alienation of the educated from the people is an alarming phenomenon in spite of the tidal wave of the freedom movement that swept the country, the advent of popular democracy, and the intermittent assaults of socialistic ideas and demands on the system. What Rabindranath Tagore said of the educated classes in India, that they were like a second storey added to an old family house with the architect forgetting to construct a staircase in-between, seems to be still essentially true of the social scene in India.

I have inflicted upon you these rather breezy generalizations in orde to highlight the current position of the university in our society and its role in the context of the developmental tasks facing the nation. It is true that today our universities and educational institutions are swelling enormoulsy with numbers with over 3.5 million students in the universities and about 130 million in the school system, straining national resources and lowering standards of education. Yet the fact is that only 38 per cent of the people are literate with a much smaller percentage managing to get inside the portals of higher institutions of learning. If our universities have been called ivory towers, they are crowded ivory towers, alienated from the masses, their relevance to the problems of the people being remote and their involvement in the vital developmental process almost insignificant.

How can we make the universities and the academic and student community actors and participants in the process of development? The University is a place of independent thinking, where young minds open up and evolve in an atmosphere of freedom and amidst the clash of opinions and ideas. There is thus a conflict between this inherent objective of a University, and the attempt to narrow it down and to harness it to some specific practical national tasks, bringing to bear upon it pressures of society and the machinery of the State. Is there an irreconcilable contradiction between the traditional idea of the

University and the demands on it being increasingly made by society today? I do not think so. As Professor A.N. Whitehead said "In the process of learning there should be present, in some sense or another, a subordinate activity of application. In fact, the applications are part of knowledge. For, the very meaning of things is wrapped up in relationships beyond themselves. Thus, unapplied knowledge is knowledge shorn of its meaning."

The current conditions in our country offer exciting opportunities for such subordinate but vital activity of applications of knowledge in the process of learning itself, establishing some sort of healthy balance in the University system between education, research and social service. First of all, it should be possible to introduce in the study of individual disciplines a new direction which emphasizes and brings out in practical terms their relevance to developmental problems, especially in the study of social sciences, economics, agricuture, architecture, engineering, urban development, environment, health sciences, managerial, physical and earth sciences. We need a problem-oriented rather than a narrowly subject-oriented education in our schools and universities. To acquire knowledge without a central purpose and any sort of subordinate application would be to gather knowledge devoid of meaning and relevance.

We are all aware that the Gandhian system of education had emphasised the joy and excitement of doing things while learning and carrying out service to the people as an integral part of education. Though not in the Gandhian way we had from time to time made halting and haphazard attempts in taking up some of the service aspects of education. In 1969-70 we started pilot projects in 37 Universities enrolling 40,000 student-volunteers in order to expose youth to social problems and to stimulate them to do service under the National Service Scheme. That and similar efforts never got off the ground. That must have been partly because in society as a whole there did not exist the spirit of service and the values associated with it. As a people we have been notoriously averse to manual work except those traditionally condemned to labour, an attitude engendered by the caste system. That was essentially a projection of the general attitude of our society which Swami Vivekananda decried when he made his famous remarks about the obsessive pursuit of personal purity by the Indian. "Our religion", he said, "is in the kitchen, our God in the cooking pot; touch me not, I am holy". This traditional attitude was paradoxically fortified by modern bourgeois-bureaucratic values imbibed by the intelligentsia which placed a higher value on sedentary Government service than active work in agriculture, industry or business. Fortunately industrialisation and technological changes are gradually breaking down such false and regressive value systems and attitudes. But we need a thorough-going peaceful, cultural revolution in our country that would completely breakdown narrow domestic walls, dead habits and debilitating distinctions and prejudices so that dignity of labour and mobility of labour are brought about on large scale opening up work of all kinds and opportunities for our young people, enabling their talents and genius to blossom rather than being kept in constricted compartments.

In this context, may I recount a Japanese story. There was a young man who was bitten with curiosity with regard to the ultimate secret of life on earth. He was told of a Buddhist sage who could reveal the secret to him. The young man went in search of him and on reaching the home of the sage he impatiently asked him what the secret of life was. The sage said, 'Young man you have come a long way, have a bath first'. After the bath, he posed the question again to the sage who advised him to rest a little and then have lunch. The lunch over, the young man put the question again and awaited with bated breath for the truth about the secret of life. The answer the sage gave was, 'Let us wash the dishes'. I hope I am not pouring cold water on the bursting enthusiasm of our young people by telling this story. Because, I belive, life is as much a matter of high idealism and hitching your wagon to a star as washing dishes and doing things by your own hands. In fact, one can often 'reach the unreachable stars' only if one is prepared to wash the dishes on earth. I can tell you that many Indians who went to Europe and America and became affluent and great did so after passing through a spell of dish-washing experience. Even a great hero like Ho Chi Minh of Vietnam did that once.

I should like now to deal with another aspect of the alienation of our Universities from society—that is lack of effective relationship between the University and Industry. We are today passing through a major industrial and technological revolution. The future jobs for our young people are in the sector of industry, technology, commerce and in the rapidly developing services sector, apart from opportunities in the vast agricultural and rural sector. To day, there is hardly any nexus between the university and the industry and even science and technology are developed in the specialised institutes and laboratories rather than in the more natural habitat of the University system. Universities can become relevant to national development when they are the main centres for the study and promotion of science and technology. For bringing about this crucial change the Government and Society have as much responsibility as universities themselves [illegible] famous SILICON VALLEY in the West Coast of the United States of America the genesis of the great electronics revolution centered around one university—the University of Stanford. It was from its research facilities and its faculty and students and the technological parks established around it that the electronics industry developed out of the intellectual and productive inter-action and collaboration between industries and the universities. In the mainly brain based electronic industry of the future the university has an important role to play which would eventually bring about innumerable new jobs for the students who come out of our educational institutions.

A study team appointed by the Department of Electronics of the Ministry of Science and Technology has estimated that the total annual additional requirements of trained manpower in the electronics sector would be 1,25,282 by the end of the 7th Five Year Plan. This volume of new employment created refers only to direct employment in the electronic and computer sector and not the indirect employment that would be generated in the economy as a whole. It is necessary for the universities to begin, seriously and systematically, research and development work in collaboration with our growing industrial sector and also to train students in these new branches of science and technology. The Government has launched a new programme for encouraging and helping our educational institutions in establishing training courses for electronics, and they are planning to set up National Institutes of Informatics Technology (NIIT) in four regions of the country. Of course, apart from all these, Government is also planning to give a vocational and technological bent to our education as envisaged in the new educational policy. It is our aim to make our schools and colleges and higher institutes of learning to turn out young people who are eminently employable and who would be forerunners in the development race to the 21st century that Prime Minister Rajiv Gandhi has initiated.

Though we have taken it as an axiom, must nevertheless emphasise here the over-riding importance of education in national development not only of higher education but primary and secondary education and also mass education. Eradication of illiteracy is central to this, because, without the majority of our population literate, neither the benefits of development nor the door of the 21st century will be open to us. That is why Prime Minister has declared eradication of illiteracy as an emergency programme called a technologcal mission to be carried out within a 15 year period. I should like to point out here the experience of Japan in this context. The success of Japan in industrialisation is often misunderstood in India as a result of imitative genius. According to a historian, "Any attempt to explain Japan's exceptional success in national development must give a high degree of credit to the educational system which took in its modern guise just a 100 years ago".

The 1872 Education Code of Japan pronounced that "There shall in future be no community with an illiterate family, nor a family with an illiterate person." In the post-war period Japan took another major decision that educational planning should constitute the main aspect of economic planning. This is a priority that we can well follow in India.

Jawaharlal Nehru once said: "A University stands for humanism, for tolerance, for reason, for progress, for the adventure of ideas, and for the search of truth. It stands for the onward march of the human race towards our higher objectives. If the Universities discharge their duties adequately, then it is well with the nations and the people. But if the temple of learning itself becomes a home of narrow bigotry and petty objectives, how then will the nation progress or a person grow in stature?"

In India today, it has become imperative for us to rise above narrow bigotry and petty objectives. National vision and national integration have been inherent in our culture and civilization. But, they have become today indispensable for the progress of the whole of India as well as of each and every part of it. The compulsion of development and our predicament in the world have made unity of India and inter-dependence of India and of the Indian people a reality and a necessity. Youth who constitute the majority of our population today are no longer just the leaders of tomorrow but of today. They have already inherited India with all its difficult problems and exciting opportunities and prospects. They have today the privilege of being part of the great adventure of uplifting millions of our people from poverty, malnutrition and ignorance, building a strong united progressive India, and contributing to the peace and prosperity of the world. These are great tasks and to shoulder them you have to prepare yourselves for the responsibility and leadership that is devolving upon you. It is an inevitable and indispensable responsibility. But as Justice Holmes put it "The inevitable comes to pass through efforts." The University is a forum for efforts, for joyous creative efforts in order to shape your own future and the future of the nation. May I wish you all success in these noble efforts. □

Council of Scientific & Industrial Research

ADVERTISEMENT NO. 2/87

It is proposed to appoint one Scientist 'F' for the Central Leather Research Institute, Madras.

The CLRI is the largest research institution in the word for leather science and technology and has a staff of 700 including about 200 professionals. Besides R & D, the Institute handles B. Tech. and M. Tech. (Leather technology) education programme for Anna University and is recognised by several Indian Universities for Ph. D. research Programmes.

This is a senior R & D management post and the incumbent is expected to provide high level leadership in the identification of research tasks, planning and execution of programmes and co-ordination between different disciplines within the Institute and outside agencies including leather industries. In addition, he is expected to assist the Director in the administrative and managerial functions of the Institute.

Job Requirements : The selected scientist will head the Tannery area of the Institute and assume responsibility for formulating, organising and implementing R & D projects in the field of leather technology with particular reference to finished leathers. Modernisation of leather industry is identified as a priority area and the incumbent will be expected to take relevant initiatives to modernise leather processing operations aimed at higher productivity and energy, time and material optimisation and such other engineering inputs. He will be required to participate in the teaching (B. Tech. and M. Tech.) and training programmes in the Institute. The position involves sensitive responsibilities including close industrial liaison.

Qualifications and Experience : Ph.D. in leather technology or a related engineering discipline followed by at least 12 years R & D experience in the development/production of various types of finished leathers. A thorough knowledge of all tannery operations and a good understanding of developments and trends in allied leather sciences is essential. Proven record of high level capability is expected, evidenced by product/process development, research publications and technology transfer successes. Teaching experience will be desirable.

Salary/Conditions of Service : The scale of pay attached to this post is Rs. 5100-150-5700-200-6300 plus allowances as admissible under Central Govt. Rules. This is a contractual appointment initially for a period of six years. The contract is extendable and the incumbent can also be confirmed. Consultancy subject to an upper limit of Rs. 15,000/- per year is permissible. Free medical aid and leave travel concession are also permissible for the family as per Govt. Rules. Residential accommodation will be provided on payment of usual rent subject to availability.

Age : Preferably below 50 years, relaxable in deserving cases.

A duly constituted 'Screening Committee' will decide on the number of Scientists to be invited to meet the full Selection Committee. The decision of the Council in this behalf will be final. Applications from employees working in Govt. Departments, Public Sector Organisations and Govt. funded research agencies will be considered only if forwarded through proper channel and with a clear certificate that the applicant will be relieved within three months of receipt of the appointment order.

Those interested may kindly send in their Curriculum Vitae in duplicate in the form obtainable from the Joint Secretary (Admn.), Council of Scientific and Industrial Research, Rafi Marg, New Delhi-110001, on or before **10th Sept., 1987**. Any information about the Institute can be obtained in writing from the Director, Central Leather Research Institute, Adyar, Madras—600 020.

Computers in Education

An International Workshop on National Issues on Computers in Education was jointly organised by the Technical Committee 3 (TC-3) of the International Federation of Information Processing (IFIP), the Computer Society of India (CSI) and the Indian Institute of Technology, Bombay from March 16 to 18, 1987 at IIT, Bombay. Sixty participants from twenty-three countries participated in discussions related to effectively integrating computers into education. The workshop did not concern itself with computer science education *per se* but was engaged in more general aspects of computer science in the broader context of all education. This was due to the fact that sufficient emphasis have all along been given to 'Learning about computers' while the concept of 'learning with computers' in which the computer, with all its power and flexibility, is merely a tool in the process of problem-solving, had been almost totally neglected despite its very crucial role in all educational activities.

Participants were agreed that the computer is a tool which can be a vehicle for economic, social and educational improvement. But this will only happen with national long-term commitment. This commitment must take the form of sufficient funding levels for long-term as well as short-term projects, careful planning and coordination, and especially major support for professional training—which, all agree, is the number one priority. While historically there has been an emphasis on the acquisition of hardware and software, the major problem now facing all nations is a lack of adequately trained teachers. Unless we are able to solve this problem, we will never realize the tremendous potential which the computer provides for giving teachers a tool to improve the quality of education.

The workshop was conducted in 10 sessions and for a general overview of the workshop deliberations, the ten issues and theme sessions may be considered under four general section headings:

Section A : The Potential of Informatics in Education.

Section B : Computers in Primary, Secondary and Tertiary Education.

Section C : Computers in Continuous, Vocational, In-Service, Non-Formal and Distance Education.

Section D : Computers in Special Education.

The following conclusions and recommendations were reached at the workshop. It is, however, necessary that each country develop its own strategy for best adopting or adapting these conclusions and recommendations.

(1) 'Learning-with-Computers' offers a very powerful tool for educators, and all efforts must be made to harness the potential of computers and informatics in education. Further, this technology enforces a deeper appreciation of educational pedagogy.

(2) Unless backed by well-planned short and long term projects at the National level, the full potential of this educational technology cannot be exploited. Financial considerations of hardware/software costs should be subservient to educational objectives.

(3) The all-pervasive nature of computers/informatics enforces awareness and literacy programmes, and the exploitation of computer-based technologies in both formal and non-formal educational sectors.

(4) Computers and informatics should play a supportive role in all educational areas, and the basic principles and methodologies of algorithmic and systems-oriented thinking should be inculcated into traditional/new teaching systems in all disciplines and areas of learning and teaching.

(5) The computer's versatility makes it an ideal tool for special education requirements, such as educational aids for the handicapped and for the mentally retarded. Also, computers can offer multilingual support facilities, widening the sphere of effectiveness into rural areas and breaking down cultural barriers.

(6) Computer-based-education offers excellent scope for exploiting the 'multiplier-effect' of good teachers, and also can be an effective tool in distance educational systems. This educational technology could therefore have a more encompassing role to play in the developing world.

(7) The key towards exploiting computer-based technologies lies in effective teacher training. Teachers have to be trained to:

(a) Accept and adopt computer/informatics-oriented techniques and methodologies into their own teaching, and/or

(b) Teach relevant computer science topics and techniques to make students more competent in their own disciplines.

(8) Computer-based national and regional educational testing and information services should be set-up to support educational planning and implementation efforts.

Training Programmes for University Personnel

Centre for Work Study in Educational Administration, Panjab University, Chandigarh organises a number of training programmes and workshops for the university officers and officials of various universities and institutions in India. With an enormous increase in complexities of university administration, in-service training plays a significant role to develop human resources to prepare them to meet with new challenges. The programmes are aimed at studying the procedures and nature of work in university offices and suggest improvements so as to make them more effective and bring efficiency coupled with economy. Some of the programmes offered for the year 1987 are as follows :

3rd Programme on 'Innovative Approaches to Productivity Improvement in University Administration'
—2.11.1987 to 7.11.1987

2nd Programme on 'Managing Examinations : Administrative Activities'
—14.12.1987 to 24.12.1987

3rd 6-week Basic Course in Work Study/Management Services
—21.12.1987

3rd 13-week Advanced Course in Work Study/Management Services
—21.12.1987

Further details can be had from Shri Shital Prakash, Honorary Director, Centre for Work Study in Educational Administration, Panjab University, Chandigarh.

National Library Policy in Offing

Mrs. Krishna Sahi, Union Minister of State for Education and Culture, recently announced that a national policy on libraries was being formulated to focus attention on rural libraries, facilities for the backward communities and women, children and the handicapped. She was inaugurating a conference of library professionals, scientists and academics convened by the National Library to commemorate its 150 years of service. She said that the National Education Policy envisaged not only a expansion in library services but also a close monitoring of such services in all the different sectors.

The libraries, she said, would form a vital link in the eradication of illiteracy through audio-visual programmes and relevant reading materials. Through the concept of Jana Shikshan Nilayams, Indian Libraries would become information centres as also promote national integration by disseminating secular and democratic values among the people.

German Fellowships for 32 Scholars

The German Academic Exchange Service has offered 32 fellowships for the academic year 1987-88 in the subjects ranging from engineering and technology to agriculture and natural sciences. The fellowships cover a 4-month German language course at a Goethe Institute followed by one or two years of research at a university or institute in the Federal Republic of Germany.

The fellowship holders have been drawn from universities, CSIR laboratories or other recognised institutes of university standard.

Visveswarayaya University

The Karnataka Government has decided to set up a technical university at Belgaum to be named after late M. Visveswarayaya.

It is also reported to have decided not to allow any more medical, dental or engineering colleges during the year. This seems to have been done to check the proliferation of capitation fee-based private medical and engineering colleges in the state. However, the Government decided to set up two Ayurvedic colleges, one in Hasan district and the other in Chickmangalur district besides a law college.

Adult Education Poster Competition

The Directorate of Adult Education is organising the fifth National Poster Competition on adult education to encourage artists to prepare motivational material for adult literacy. The theme for the posters is adult education with reference to literacy, functionality and awareness components for the 15-35 age group. The suggested slogans for the posters include: Be literate and spread literacy; Contribute to progress of country; A literate mother is the backbone of a happy family; and Mass movement for literacy is the need of India today. These slogans could be in any of the following languages: Assamese, Bengali, English, Gujarati, Hindi, Kannada, Kashmiri, Marathi, Oriya, Punjabi, Sindhi, Tamil, Telugu and Urdu.

A first prize of Rs. 5,000/- second prize of Rs. 3,000 and third prize of Rs. 2,000 would be given to the winners.

New Varsities for Rajasthan

The Rajasthan Government is reported to have decided to set up an open University at Kota and an agricultural University at Bikaner. The State Cabinet has approved the Ordinances and the Universities would start functioning soon.

The correspondence courses being conducted at present by the Rajasthan University would be handed over to Kota open university while the proposed agricultural University at Bikaner will take over all the agricultural colleges located at Udaipur and Jodhpur.

PAU Adopts Semester System

The Punjab Agricultural University (PAU) has decided to switch over to semester system from the 1988 academic session. A deans committee has been constituted under the chairmanship of Dr. B.S. Dhillon, Dean, Postgraduate Studies, to work out the detailed time table for the proposed switch over.

According to Vice-Chancellor of the university, Dr. Sukhdev Singh, the step was being taken in consonance with the decision taken last year by the Vice-Chancellors of all the agricultural universities to this effect. He said in the prevailing academic environment the semester system provided a cushion for adjustment in case of loss of days due to various factors.

M.S. Mehta Research Fellowship

The Indian Adult Education Association has instituted Mohan Sinha Mehta Research Fellowship to perpetuate the memory of Dr. M.S. Mehta, former President of the Association and an eminent educationist, statesman and administrator. The object of the fellowship is to enable the individuals to undertake research studies in improving the on-going programme of adult education. Individuals are eligible for research fellowship but the proposal has to be sent through the institution where the applicant is working. The amount of fellowship is Rs. 3,000/- and it should be completed within one year. Further details can be had from the Director, Indian Adult Education Association, 17-B, I.P. Estate, New Delhi - 110 002.

Guinness Book of Records

M/s Geetha Publishing House of Guntur, Andhra Pradesh, have obtained translation rights (Publication Rights) of the Guinness Books of Records in the four South Indian languages i.e. Telugu, Tamil, Malayalam and Kannada. The Indian publisher has also been permitted by his British principals to include Indian Records in all categories in the translated editions.

News from Abroad

Commonwealth Open University Proposed

An expert group consisting of eminent academicians has suggested the establishment of a University of the Commonwealth to make learning available to rich and poor students. Set up by the Commonwealth Secretary General and headed by Lord Briggs, the Provost of Vorcester College, Oxford, the Group has suggested that the proposed university should use satellite technology adopted by open university to enable any learner anywhere in the Commonwealth to study any distance teaching programme available from any bonafide college or university. A collection of best courses from open universities and distance teaching universities and colleges throughout the Commonwealth has been suggested for the proposed university. It has also been suggested that the teaching should be conducted through correspondence courses, tape recordings and video cassettes.

US Honours Hargobind Khorana

The noted India born gene scientist Dr. Hargobind Khorana has been awarded the U.S. Presidential National Medal of Science for his innovative contributions to biology. His research work has contributed towards the understanding of the gene structure, membrane function and vision and has had a major impact on biological and chemical sciences.

Dr. Khorana, a Noble laureate who is now with the Messachusettes Institute of Technology (MIT), while replying to the felicitations at a reception hosted in his honour, said that his original work in connection with genes had led to the growth of molecular biology. However in the last ten years he had been interested in vision—how light signals get amplified and transferred by proteins to the brain in three dimsensional depth.

News from UGC

INSAT-1B Programme of UGC

Between 16th July to 31st July, 1987 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV Network throughout the country. For the viewers in Delhi and surrounding areas these programmes can be seen on the second channel.

16.7.87

"In Search of the Past-Srilanka & Java"
"Quit India Movement-I"

17.7.87

"NASA at Work-XI"
"Space Research—Your Health & Transportation"
"A Talk on what is the Study of Astrophysics"

18.7.87

"Techniques in Genetic Engg. Oligonucleotides—Synthesis & Use"
"Kindney Stone Surgery"
"Yoga : For the care of the Spine"

19.7.87 (Sunday)

No Telecast

20.7.87

"Newtons Law of Motion"
"Change—The Interdisciplinary Way"
"Mothods of Observing Transparent objects under a Microscope"

21.7.87

"The Indian Parliament—A Conversation with Balram Jakhar"
"Economics Today—Brazil : Threshold of the Future"
"Functions of Management Planning"

22.7.87

"Say what you mean in English-I"
"King Lear: An Introduction"
"Language 3-5"

23.7.87

"In Search of the Past—Empires of the Maya & the Aztocs"
"Quit India Movement-II"
"Ancient Egypt"

24.7.87

"NASA At Work-XII"
"A Talk on Infrared Astronomy"
"The Ozone Story"

25.7.87

"Techniques in Genetic Engg. In-Vitra Mutagenesis"
"The Scorpion"
"Butterfly : Life Cycle"

26.7.87 (Sunday)

No Telecast

27.7.87

"Energy : A Question of Balance"
"The Language Of Science"
"Brown Treasure"

28.7.87

"The Indian Judiciary : A Conversation with Justice P.N. Bhagwati"
"Economics Today—World Shipping"
"Ancient Rome"

29.7.87

"Say what you mean in English-II"
"Julius Ceasor"
"The Creative Process"

30.7.87

"In Search of the Past : S. America—The Empire of the Inca"
"Confluence of Culture"
"Secrets of Greenland Ioo"

31.7.87

NASA At Work-XIII
"Fire to Space—The Story of Centoor"
"University Roundup"

Sports News

Combined Universities Excel

Combined Universities Junior Hockey team displayed tremendous potential when they made to the finals in the recently concluded Junior National Hockey Championship at Lucknow. In the final match played against the host state, varsities' players lost 3-2 and secured the runners up position.

In their sojourn to the finals, Combined Universities routed Hyderabad with margin of 7-0, defeated the PEPSU Team 3-2, trounced Delhi 5-0 in the quarter finals, and in the semi-finals defeated Punjab 6-5.

The team was trained for a month at Aligarh under the supervision of Mr. Bhagat Singh, one of the Senior Coaches of the NIS, presently doing duty with the Aligarh Muslim University.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
July 17-20, 1987	Seminar on Undergraduate Curriculum and Social Relevance need for Community Colleges	To discuss all aspects of undergraduate education with reference to community needs	Association of Indian Universities in collaboration with Gujarat Vidyapith.	The Organising Secretary C/o Gujarat Vidyapith Ahmedabad 380014
July 22-24, 1987	15th National Conference on Fluid Mechanics and Fluid Power	To bring together researchers and designers, working in diverse fields like Mechanical, Civil, Power, Aeronautical and Chemical Engg. besides Mathematics and Physics to review the state of the art and the recent developments.	Regional Engineering College, Srinagar in collaboration with National Society of Fluid Mechanics and Fluid Power.	Dr. A.M. Bhat, Organising Secretary, 15th National Conference on Fluid Mechanics and Fluid Power, Department of Mechanical Engineering, Regional Engineering College, Srinagar 190 006.
September 18-21, 1987	National Seminar on Energy Education	To discuss various aspects of energy education—meaning and scope, resources, institutionalisation, teacher preparation, curriculum development, and role of mass media.	Department of Education, Rohilkhand University	Dr. Beena Shah, Organising Secretary, NASEEZ, Department of Education, Rohilkhand University, Bareilly-243 001, U.P.
Sept. 21 - Oct. 4, 1987	Training Course in Research Methodology in Geography	To expose the participants to research methods in Geography and quantitative and cartographic techniques employed in Geographical research.	Department of Earth Sciences, Manipur University, Imphal.	Dr. R.P. Singh, Dpartment of Earth Sciences, Manipur University, Imphal.
November 16-20, 1987	Seventh National Symposium on Radiation Physics	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
November 25-27, 1987	International Conference on Mud Architecture	To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.	Ministry of Urban Development, Govt. of India, in collaboraton with the Govt. of Kerala, HUDCO and the All India Housing Development Association.	Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & & Urban Development Corporation, K.G. Road, Bangalore - 560 009.
November 26-28, 1987	International Seminar on Instrumental Methods of Electro-Analytical Techniques.	To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electroanalysis.	Indian Institute of Science, Bangalore.	Prof. M.H. Dhananjaya, Principal and Chairman of the Organising Committee, S.J. College of Engg., Mysore.
December 7-11, 1987	Seventh Triennial International Conference on Thin Films. (ICTF-7)	To take stock of recent progress in the field of science, technology and applications of their films.	Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.	Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

CURRENT DOCUMENTATION IN EDUCATION

A List of Select Articles culled from Periodicals received in AIU Library during June, 1987.

EDUCATIONAL PHILOSOPHY

Wilshire, Bruce. Can the university defend the values upon which it stands? *J Hr Edn* 58(3), 1987, 249-260.

EDUCATIONAL PSYCHOLOGY

Kerr, Barbara A. The career development of creatively gifted adults. *New Directions Cont Edn* (32), 1986, 59-70.

Milburn, Betty. The role of self-esteem in the career development of adults. *New Directions Cont Edn* (32), 1986, 33-44.

Miller, Juliet V. Helping adults balance career and family roles. *New Directions Cont Edn* (32), 1986, 45-58.

Smart, John C. and Pascarella, Ernest T. Influence on the intention of reenter higher education. *J. Hr Edn* 58(3), 1987, 306-322.

EDUCATIONAL SOCIOLOGY

Byrne, Eileen. Gender in education: Educational policy in Australia and Europe, 1975-1985. *Comp Edn* 23(1), 1987, 11-22.

Charner, Ivan and Rolzinski, Catherine A. Critical questions and issues for integrating education and work. *New Directions Cont Edn* (33), 1987, 87-92.

Charner, Ivan and Rolzinski, Catherine A. New directions for responding to a changing economy: Integrating education and work. *New Directions Cont Edn* (33), 1987, 5-15.

Davis, Diane E and Astin, Helen S. Reputational standing in academe. *J. Hr Edn* 58(3), 1987, 261-275.

Eliou, Marie. Equality of the sexes in education: And now what? *Comp Edn* 23(1), 1987, 59-68.

Moore, Kathryn, M. Women's access and opportunity in higher education : Towards the twenty-first century. *Comp Edn* 32(1), 1987, 23-34.

Rudd, Ernest. Students and social class. *Studies Hr Edn* 12(1), 1987, 99-106.

EDUCATIONAL PLANNINGS

Kelly, Gail P. Setting state policy on women's education in the Third World: Perspectives from comparative research. *Comp Edn* 23(1), 1987, 95-102.

Rolzinski, Catherine A and Charner, Ivan. Improving practice: Lessons from the case studies. *New Directions Cont Edn* (33), 1987, 75-85.

EDUCATIONAL ADMINISTRATION

Eustace, Rowland. The England ideal of university governance: A missing rationale and some implications. *Studies Hr Edn* 12(1), 1987, 7-22.

Lenn, Marjorie Peace. Accreditation, certification and Licensure. *New Directions Hr Edn* (57), 1987, 49-64.

TEACHERS & TEACHING

Baldwin, Roger G. Professors and professional programs: Fostering mutually beneficial development. *New Directions Hr Edn* (57), 1987, 83-90.

Hart, Norah I. Student teachers' anxieties: Four measured factors and their relationships to pupil disruption in class. *Ednl Res* 29(1), 1987, 12-18.

EDUCATIONAL RESEARCH

Davies, Lynn. Research dilemmas, concerning gender and the management of education in Third World countries. *Comp Edn*. 23(1), 1987, 85-96.

Shattock, Michael. False images but a new promise in universities' contribution to industrial and technological advance. *Studies Hr Edn* 12(1), 1987, 23-38.

SYNTHESES OF educational productivity research. *Intl J. Ednl Res* 11(2), 1987, 145-252.

EDUCATIONAL TECHNOLOGY

Johnston, Vivien M. Attitudes towards microcomputers in learning: 1. Pupils and software for language development. *Ednl Res* 29(1), 1987, 47-55.

Langer, Victor. Developing a computer-integrated manufacturing education center. *New Directions Cont Edn* (33), 1987, 27-38.

EVALUATION

Harris, John. Assessment: Providing quality assurance for students, programs and career guidance. *New Directions Hr Edn* (57), 1987, 65-74.

Mckeachie, Wilbert J. Instructional evaluation: Current issues and possible improvements. *J Hr Edn* 58(3), 1987, 344-50.

Pollitt, Christopher. The politics of performance assessment: Lessons for higher education. *Studies Hr Edn* 12(1), 1987, 87-98.

ECONOMICS OF EDUCATION

Berg, David J and Hoenack, Stephen A. The concept of cost-related tuition and its implementation at the university of Minnesota. *J Hr Edn* 58(3), 1987, 276-305.

Coughlin, Clatus C. and Erekson, O.Homer. Determinants of state aid and voluntary support of higher education. *Eco Edn Rev* 5(2), 1987, 179-190.

Dye, Richard F. Aid sources for higher education: Taxes and other determinants. *Eco Edn Rev*. 5(2), 1986, 191-196.

Little, Angela. From educating and employing to learning and working. *Prospects*. 16(1), 1986, 11-31.

PROFESSIONAL EDUCATION

Barnett, R.A. and others. Models of professional preparation: Pharmacy, nursing and teacher education. *Studies Hr Edn* 12(1), 1987, 51-64.

Stark, Joan S. Liberal education and professional programs: Conflict, coexistence or compatibility. *New Directions Hr Edn* (57), 1987, 91-102.

ADULT EDUCATION

Derber, Charles. Worker education for a changing economy; New labor-academic partnerships. *New Directions Cont Edn* (33), 1987, 49-58.

Lamdin, Lois and Hassan, Maxine Ballen. The business development and training center: An educational maintenance organisation. *New Directions Cont Edn* (33), 1987, 39-48.

Levine, Arthur E. Career education: A prospective, a retrospective, and a few guesses. *New Directions Hr Edn* (57) 1987, 13-20.

Miller-Tiedeman, Anna and Tiedeman, David V. Lifecareer today, livelihood tomorrow. *New Directions Cont Edn* (32), 1986, 85-94.

Tight, Malcolm, Mixing distance and face to face higher education. *Open Learning* 2(1), 1987, 14-18.

Wright, Tony. Putting independent learning in its place. *Open Learning* 2(1), 1987, 3-7.

COMPARATIVE EDUCATION & COUNTRY STUDIES

PLOWDEN TWENTY years on. *Oxford Rev Edn* 13(1), 1987, 13-124.

Szechy, Eva. The problems of female education in Hungary, *Comp Edn* 23(1), 1987, 69-74.

THESES OF THE MONTH

A List of Doctoral Theses accepted by Indian Universities

BIOLOGICAL SCIENCES

Marine Biology

1. Rashid, K.K. Abdul. *Structural studies on some metal complexes of embelin*. CUST.
2. Singh, I.S. Bright. *Studies on the bacteria associated with Penaeus indicus in a culture system*. CUST.

Microbiology

1. Avadhanulu, K.R. *Studies on biological nitrogen fixation with emphasis on Rhizobia*. Nagpur.
2. Ray, Ramesh Mangubhai. *Some studies on enzymatic hydrolysis of cellulosic wastes and its recycling*. Patel.
3. Sandhya, S. *Bio conversion of cellulosic sludges from pulp and paper mill into fungal biomass*. Nagpur.

Botany

1. Behl, Nita. *Investigation on some aspects of mushroom, Agaricus bisporus (Lange) Singh*. Rajasthan.
2. Chopra, Kavita. *Studies on MLO/spiroplasma associated monstrosities, their perpetuation and control*. Rajasthan.
3. Gopalakrishnan, V. *Studies on stenochlaena and related genera*. Calicut.
4. Goswami, R.S. *Pharmacogenetic studies on root extracts of Asparagus racemosus and A. ascendens with special reference to human consumption*. Bhopal.
5. Jain, Aruna. *The effects of industrial pollutants on the ecology of certain herbaceous plants of Bhopal with special emphasis on chlorophyll formation and productivity*. Bhopal.
6. Joshi, G.C. *Studies on the thistle and legume families of Kumaun*. Kumaun.
7. Joshee, Nirmal. *Studies in the reproductive biology of alkaloid yielding solanums: Histological, histochemical, electrophoretic and physiological aspects of stylar heteromorphism in S. Khasianum Clarke and S. sisymbrifolium Lam*. NEHU.
8. Kundu, Anadikumar. *Cytological and photometric analysis of some medicinal species and their use as parameters for rapid screening*. Calcutta.
9. Naugaria, Mahendranath. *Population ecology of Atylosia scarabaeoids in the rangelands of Jhansi, U.P*. Bundelkhand.
10. Nigar Alam. *Chromosome characteristics: DNA estimation in commelinaceae*. Calcutta.
11. Ramnath, Elaswarapu. *Use of haploid cell lines of crop plants in evolving mutants of significance in plants breeding*. Calcutta.

12. Sen, Sibnarayan. *Studies on the induced genetic variability and selection response in irradiated lentil.* Calcutta

13. Shama Rao, S. *Fungal diseases of mulberry in Karnataka.* Bangalore.

14. Sharma, Kundan Kumar. *Flora of Rajasthan: A floristic survey of series inferae (Sensu B & H).* Rajasthan.

15. Tewari, Manjusha. *Ecology of pines on eroded lands in Kumaun Himalaya.* Kumaun.

Zoology

1. Bandyopadhyay, Manisha. *The role of sympathico-adrenomedullary system on the reproductive physiology of the weaver bird, Plocens philippinus.* Calcutta.

2. Bhatta, Gopalkrisnha Madhava M. *Some aspects of reproduction in the apodan amphibian ichthyophis.* Karnatak.

3. Bisht, Yashodhara. *Studies on the effect of environmental factors on hypophysis and gonads in mahaseer, Tor Putitora.* Kumaun.

4. David Raj, V.S. *Biology of a rhynchobdellid leech., Batracohdella reticulata Kuburaki.* Madurai.

5. Pannu, Harmahinder Kaur. *Studies on mating behaviour, oogenesis and histochemistry of the female reproductive organs in epilachna beetle, Epilachna vignitiocto mentata Fabricius.* HP.

6. Samundra Singh. *Ecological studies in relation to fisheries potential of Bund Baretha reservoir and its comparision with Dehra pokhar Jaghina.* Rajasthan.

7. Sharma, P. *Change induced by certain chemicals and radiations, gamma rays, in gonads of Cypinascarpic and its various stages of development.* Bhopal.

8. Shukla, V.K. *Studies on the stress induced neuroactive material and its effects on the endocrine glands in some animals.* Bhopal.

9. Sinhahikim, Amiyaprasad. *Histophysiological studies of spermatogenesis and accessory organs of reproduction in Bandicota bengalensis Gray, a mammalian pest.* Calcutta.

10. Solanki, G.S. *Studies on desertification: Ecology of goat population of arid to marginal semi arid regions of Western India.* Saurashtra.

11. Sudha, H.R. *Studies on some aspects of the reproductive biology of Mystus vittatus together with an account on the development of hypophysis in Catla cat'a.* Bangalore.

Medicine

1. Chattopadhyay, Ipsita. *Effects of certain metallic pollutants on mammalian systems.* Calcutta.

2. Chaudhuri, Chandra. *Studies on some hormonal aspects of fertility and infertility.* Calcutta.

3. Ghosh, Sukla. *Glucose homeostasis in the human fetuses.* Calcutta.

4. Gundappa, Girija. *Study of effects of chronic undernutrition on the morphological features of the developing cerebral cortex.* Bangalore.

5. Gupta, Jang Bahadur. *Pharmacology interventions in experimental myocardial infarction: A biochemical and homodynamic study.* Rajasthan.

6. Mathur, Bhagwan Swaroop. *Effect of some dietary factors (hypervitaminosis A & C) vegetable oils and cannabis on structure and function of testis in rats.* Rajasthan.

7. Rajurkar, Veena B. *Some biochemical studies in diabetes and other stress conditions.* Nagpur.

8. Rami Reddy, Venkata. *Immunodiagnostic studies in filariasis.* Nagpur.

9. Satya Narayan. *Cytotoxicity of intratracheally administered xenobiotics in rat lung.* Panjab.

Agriculture

1. Banerjee, Malay Kumar. *Studies on leaf curl virus resistance in tomato, Lycopersicon esculentum Mills.* *HAU.*

2. Girase, Pralhadsingh Dalpatsing. *Studies on the food feed intercropping in Sorghum, Sorghum bicolor (L). Moench.* MP. Krishi.

3. Jadhav, Ankush Shrirang. *Studies on the wheat based cropping system with reference to fertilizer management.* MP Krishi.

4. Pawar, Vitthal Sukdeo. *Scheduling of irrigation and effect of phosphate fertilization on the growth, yield and quality of garlic, Allium sativum L.* MP Krishi.

5. Rajendra Prasad. *Water-use and fertilizer-use efficiency of maize and wheat as affected by root manipulation through tillage on two soils.* PAU.

6. Randhawa, Jatinder Singh. *Genetic assessment of floral biology and productivity in brinjal, Solanum melongena L.* PAU.

7. Sarawgi, Arvind Kumar. *Partial diallel cross analysis of yield and its components in rice, Oryza sativa L.* JN Krishi.

8. Sharma, Om Prakash. *Inheritance of resistance to mosaic virus disease and some qualitative and quantitative traits in Capsicum annuum L.* YS Parmar.

9. Shau, Ramkumar. *Inheritance and allelic relationships of bacterial blight in rice, Oryza sativa L.* JN Krishi.

10. Tagi, Alok. *Effect of different levels of nitrogen, potassium and irrigation on growth, cropping and quality of plum, Prunus salicina Lindle cv santa rosa.* HP Krishi.

Veterinary Science

1. Barmanray, Asimkumar. *Studies on bionomics, experimental infection with miracidia paramphistomes and mollus cicidal trials on Indoplanorbis exustus (Desayes, 1834).* HAU.

2. Buragohain, Sushil Chandra. *Study on some gonadotrophin induced changes in reproductive status of developing male goats.* HAU.

3. Khanna, Kuldeep. *Studies on growth, biochemical and hormonal changes in blood and a semen quality of turkeys subjected to feed restriction.* HAU.

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Advertisement No. 4/87 **Dated the 30th June, 1987**

Applications are invited for the following posts :

Sl. No.	Name of Posts	No. of Posts	Specializations
1.	Professor in Chemistry	2	(i) Physical (ii) Inorganic
2.	Professor in Commerce	1	Open
3.	Professor in Economics	1	Econometrics
4.	Associate Professor in Commerce	2	(i) Accounting & Finance (ii) Management Studies
5.	Associate Professor in Mathematics	1	Open (Preferably Pure Mathematics)
6.	Associate Professor in English	1	English Language Teaching (Method)
7.	Associate Professor in Earth Science	1	Geology
8.	Associate Professor in Chemistry	2	(i) Inorganic (ii) Open
9.	Associate Professor in Life Science	1	Plant Pathology/ Plant Physiology
10.	Associate Professor in Manipuri	1	Folklore
11.	Associate Professor in Hindi	1	Comparative Literature
12.	Associate Professor in Physics	1	Theoretical/Solid State Physics
13.	Associate Professor in Computer Science	1	
14.	Assistant Professor in Commerce	1	Marketing Management
15.	Assistant Professor in Life Science	1 1 (Temporary)	Entomology Bio-statistics
16.	Assistant Professor in Anthropology	1	Palaeo-Anthropology
17.	Assistant Professor in Political Science	2	(i) South East Asian Studies (ii) Government & Politics in India
18.	Assistant Professor in Manipuri	1	Manuscriptology
19.	Assistant Professor in Linguistics	1	Open
20.	Assistant Professor in English	1	English Literature/Language
21.	Assistant Professor in Economics	1	Agricultural Economics
22.	Assistant Professor in Library Science	2	Open
23.	Assistant Professor in Earth Science	1	Petrology/Igneous/ Metamorphic
24.	Programmer in Computer Science	2	

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Essential Qualifications

1. **Professor :** An eminent scholar with published work of high quality actively engaged in research in the relevant field. About ten years experience of teaching and/or research. Experience of guiding research at doctorate level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge in the relevant field.

2. **Associate Professor**

(a) Good academic record with a doctoral degree or equivalent published work in the relevant field. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

(b) About 5 years experience of teaching and/or research provided that at least three of these years were as Assistant Professor/Lecturer or in an equivalent position.

(c) This condition may be relaxed in the case of candidates with outstanding record of teaching/research.

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(a) Master's degree in Computer Science/ Application or Master's degree in any discipline with a diploma in Computer Science/Applications or Bechelor of Engineering in Computer Science/Electronics and Telecommunications.

(b) A minimum of 5 years experience in computer systems, development, computer programming and in conducting training programmes in computer science.

4. **Assistant Professor**

(a) A doctorate degree or research work of an equally high standard; and

(b) Good academic record with at least 2nd Class Master's degree in the relevant field from an Indian University or an equivalent degree from a foreign University.

Provided, if the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax the above qualifications.

5. **Programmers**

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How to Apply

Applications, on plain paper (in duplicate, with attested copies of certificates in support of qualifications and experience showing candidate's name; father's name; academic and professional attainment; teaching/research experience; field of specialization; publications (to be enclosed with reprints); details of visits to foreign countries and assessment reports from at least two persons well aquainted with the candidate's professional work should reach the REGISTRAR, MANIPUR UNIVERSITY, IMPHAL-795 003 on or before 29-7-1987.

Applications received late or incomplete in any respect may not be entertained. Persons already in service must apply through their employers so as to reach this office on or before the last date fixed. No candidate will be considered for appointment unless he/she produces a "No Objection Certificate" from his/her employer at the time of interview.

Retired persons who have not attained the age of 62 years may also apply for appointment on contract basis. It will be open to the University to consider the names of suitable candidates who may not have applied.

REGISTRAR

PANJAB UNIVERSITY

CHANDIGARH

Advertisement No. 5/87

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, alongwith postal orders of Rs. 10/- by 5.8.1987. Fourteen days extra time is permissible to persons who have to submit their applications from abroad.

1. **Readers** : (Rs. 1200-50-1300-60-1900). Centre for Computer Science & Applications-2.

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Lecturer in English —	1	Panjab University Evening College
Lecturer in Public Administration —	1	
Lecturer in Sanskrit —	1	
Lecturer in History —	1	
Lecturer in Economics	1	Directorate of Correspondence Courses, Panjab University.

3, **Research Fellow** : (Rs. 950/- p.m. (fixed). Statistics-1

Note :—1. The Vice Chancellor could place before the Selection Committee names of suitable persons for its consideration alongwith the applications received in response to the advertisement.

2. It is not obligatory on the part of the University to call for Interview every candidate who possesses the essential qualifications.
3. The number of vacancies may change.
4. The University may also prepare panels of suitable candidates for appointment against vacancies occurring within a specified period.

Detailed instructions, specialisations, various applications and reservations concerning the various posts and other details are available with the application forms. These can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Rs. 2/- or by making a written request to the Deputy Registrar (Estt.), Panjab University, Chandigarh, accompanied by self-addressed stamped (worth Rs. 3.40) envelope of 23 x 10 cms and postal order of Rs. 2/- drawn in favour of the Registrar, Panjab University, Chandigarh.

BHARATHIDASAN UNIVERSITY

TIRUCHIRAPALLI-620 024

'CORRIGENDUM' TO NOTIFICATION

DATED 22-6-87

"In respect of the post of Lecturer in the Department of Mathematics of the University, M.Sc. (Mathematics) with M.Tech (Computer Science) will be an alternative Basic Qualification."

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3. **Lecturer (Computer Science) — One**

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1.	Professor	Permanent	1500-60-1800-100-2000-125/2-2500 (UGC)	3220/-
2.	Lecturer	Permanent	700-40-1100-50-1600 (UGC)	1977/-
3.	Resident Medical Officer	Permanent	2000-60-2300-EB-75-3200-100-3500 (Revised)	2205/-
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DIRECTOR

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Advertisement No. P.R./1516/19/87 **Dated : 30-6-1987**

NOTIFICATION

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Sl. No.	Name of Post	Department	No. of Posts	Remarks
1.	Reader	Library & Information Science	1	Non-plan; reserved for SC
2.	Lecturer	Library & Information Science	1	Non-plan; open merit
3.	Lecturer	Camputer Science	1	Temporary; open merit

Application forms along with details regarding qualifications, age, scales of pay etc., can be had on request from the Deputy Registrar (Admn), University of Kerala, Trivandrum 695 034 on production of a challan receipt for Rs. 2/- (Rs. Two only) remitted under KUF head of account in any branch of the SBT or Crossed Indian Postal Order (in the case of persons outside the State) for the amount drawn in favour of the Finance Officer, University of Kerala, Trivandrum 695 034 specifying the post for which application form is required.

The last date for receipt of completed applications is **5-8-1987.**

S.K. Rajagopal
REGISTRAR

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Master of Education	One Year	B.Ed.	Eng. & Mar.	8.7.87	Rs. 20/-
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Dr. V.B. Mehta
PRINCIPAL

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Advt. No. 3/1987

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Qualifications

Eminent scholarship with published work of high quality and active engagement in research and ten years' experience of teaching or research and experience of guiding research at doctorate level.

OR

Outstanding scholarship with established reputation for significant contribution to knowledge.

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B.M. Singh
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For (III) Minimum qualifications as for (II).

Age Limit : For (I) below fifty, for (II) & (III) below thirty.

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1. Name, 2. Mailing Address, 3. Date of birth (to be certified), 4. Academic Record (to be certified) giving year of passing, division and percentage of marks obtained, award/distinctions, if any, for all public examinations, 5. Research Experience, 6. Research Guiding Experience (only for Item No. I), 7. Publications, 8. Present occupation and salary drawn, 9. A brief scheme of research proposed to be undertaken if appointed.

N.B. 1. The choice of the Selection Committee may not be confined to those who formally apply. Prescribed qualifications and age limit may be waived in case of candidates found otherwise outstanding.

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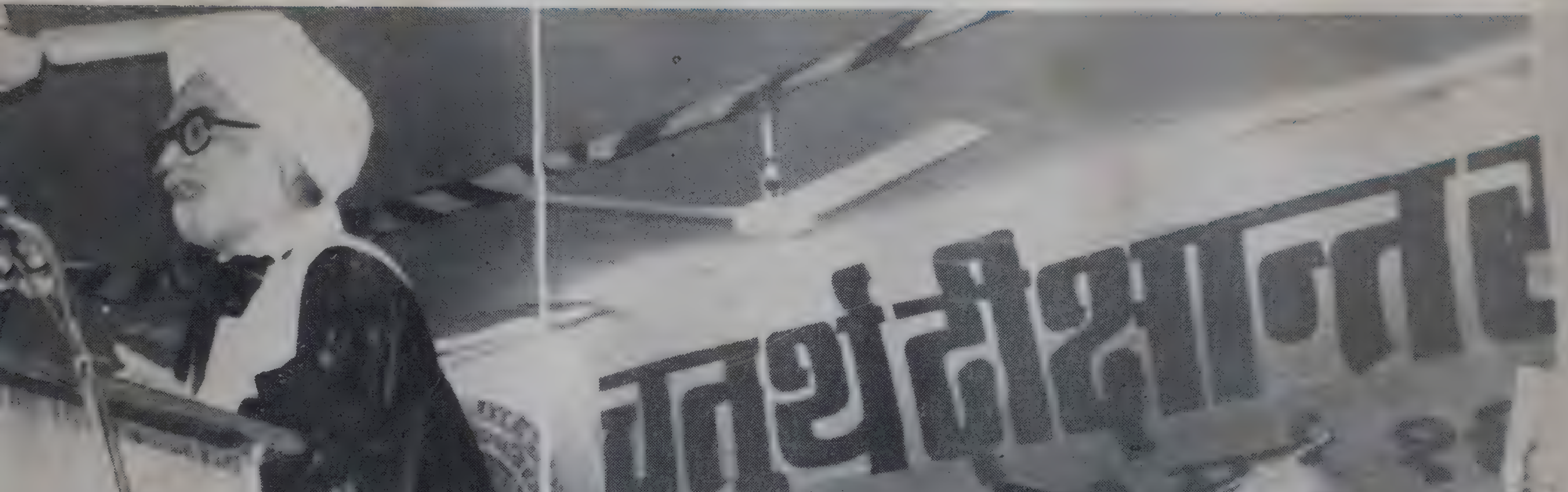
MONDAY, JULY 20, 1987 Rs. 1.50



Dr. Manmohan Singh, Deputy Chairman, Planning Commission, delivering the convocation address at the Narendra Deva University of Agriculture & Technology, Faizabad

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PUNE (MAHARASHTRA)

The Maharashtra Association for the Cultivation of Science, PUNE-411 004 has instituted a Professorial Chair to commemorate the memory of the Late Prof. S.P. Agharkar, who was one of the most distinguished Professor of Botany in India and one who lived and died for the promotion of science in India. He was also the Founder Director of the Maharashtra Association for the Cultivation of Science.

The objective in establishing the Professor S.P. Agharkar Chair is to provide an opportunity to eminent scientists to take time off from his routine duties to pursue high quality research in any branch of Biological Sciences or to help in the initiation of new and emerging areas of research in biological science which could eventually become one of the areas of thrust of MACS or to write treatise, critical monographs on topics of interest to MACS and thereby promote the cause of science which was dear to Professor Agharkar. The Agharkar Professor could also give courses and guide young research students. The scope of the Agharkar Professorship has purposely been kept broad and wide. Similarly the tenure of the Professorship could also vary from one year to five years. The Vice-Chancellors of the universities and Heads of National Laboratories and Research Institutes are requested to nominate suitable scientist's for the S.P. Agharkar Professorship.

A token honorarium of Rs. 4,000/- (fixed) p.m. will be admissible to the person nominated as Agharkar Professor during the tenure of his nomination which could be initially upto three years. The tenure could be extended for a further period of two years depending upon the progress and the nature of work carried out. MACS will provide all the basic laboratory facilities and the necessary contingent expenditure. MACS will also try to provide family residential accommodation to the Agharkar Professor for the duration of his tenure. The person nominated should be above 40 years of age.

There is no prescribed form for nominating the names of suitable candidates. The nomination for the Agharkar Chair should accompany the Bio-data of the nominee alongwith his list of publications, critique on the scientific work done by him and a brief description of the proposed work. This should be sent alongwith the recommendations to the Director, Maharashtra Association for the Cultivation of Science, Law College Road, Pune-411 004 so as to reach him before **31st August, 1987**.

UNIVERSITY
NEWS

VOL. XXV JULY 20
No. 29 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor:
SUTINDER SINGH

- 6 JUL 1987
C.F.T.R.I., MYSO

Educational Needs for Integrated Rural Development

Technologists with Managerial Skills

N.G.P. Rao*

Introduction

Despite significant growth in agricultural production, the share of the rural sector in the gross national product (GNP) has declined from 58.9% in 1950-51 to 41.6% in 1978-79. This indicates that the allied sectors of rural economy have not received due attention. The objectives of rural development extend beyond any one particular sector.

The technology policy statement of the Government of India (1983) asserts that the technology must be viewed in the broadest sense covering agriculture alongwith manufacturing sector ranging from village, small scale and cottage industries to medium, heavy and sophisticated industries. There are inherent problems about the nature of science and technology, its relationship with society and the managerial innovations required to direct and utilize science and technology effort for rural development and they need to be understood in depth.

Rural areas have land, livestock, labour and some capital. If properly mobilised, they could reduce poverty and improve quality of life. This implies fuller development of existing resources; the introduction of new production technology at the grass-root level and creation of new types of institutions and organizations. A national programme of rural development, therefore, includes a mix-up of activities, raising agricultural output; generation of agro-industries; creation of new employment opportunities; improvement of health of cattle and human beings; education; expansion of communications and improvement of rural housing, roads and sanitation.

A missing link in the integrated rural development programmes has certainly been an integrated personality who is reasonably well equipped with the technical know-how and the managerial skills. The present village level worker nor the Block Development Officer could be expected to meet such challenges. Presently, available institutions in the country are subject oriented or management oriented and there is a need to design a specific course leading towards development of integrated personalities to meet the future challenges wherein the technological and management ingredients are bound to be of a different order. Such an individual could analyse the emerging alternatives and explore utilising science and technology for rural societies into the overall framework of the developmental strategies.

Vice-Chancellor, Marathwada Agricultural University, Parbhani 431 402 (Maharashtra)

Objectives

The divergent interests of country and the town, industry and agriculture have been perennial issues. Pandit Jawaharlal Nehru wrote "There is no question of palaces for millions of people. But there seems to be no reason why millions should not have comfortable and up-to-date homes, where they can lead a cultured existence. Many of the present over-grown cities have developed evils which are deplorable. Probably, we have to discourage this over-growth and at the same time encourage the village to approximate more to the culture of the town."

What should then be the future village of our dreams ? Should a conceptual village emerge out of repair and reconstruction of existing villages ? Should it be dissipated into the farms ? Should we construct altogether new modern villages with no caste and creed barriers ? Should it be a combination of the various alternatives ? What are the resources ? How best could they be exploited ?

In crop improvement programmes, the perennial evolutionary approaches yielded only marginal benefits. Recent revolutionary approaches involving changes in the form and function of plants had brought about quantum increases in a relatively short period. Construction has been easier than reconstruction.

There is need for professionals, who could analyse available and emerging alternatives and act. They should be equipped with competence in various technological components of the Integrated Rural Development programmes coupled with managerial and analytical abilities.

A fouryear degree course (B. Tech.) in Rural Technology could meet these needs.

Course Structure

The course structure may have four segments :

1. Classroom lectures and practicals
2. Village level surveys and studies
3. Working with public and voluntary organisations involved in rural development
4. Internship during which a project report will be written

The following areas of study could be covered :

1. **Rural Communities** : The development of the Indian Village system-rural communities, social change and the rural community, population characters and change, population control, role of rural women, rural sociology—land reform, land tenure, consolidation of holdings—rural institutions, rural education and culture and the process of urbanisation.

2. **Rural Resources** : The eco-system—physical variables like climate and soils, land resources and their conservation and development; biological variables including agriculture and animal husbandry; socio-cultural variables such as human resources, resource inventory, resource analysis and resource utilization.

3. **Rural Design and Architecture** : Conceptual Villages—rural housing, farm structures, community centres, schools, market places, recreation and cultural centres; sanitation, water supply; roads and communication; and other community amenities—rural environment, land scaping and environmental protection.

4. **Agriculture, Horticulture and Social Forestry :** Agricultural resources, climate, soil, water, crop production, improved varieties, fertilizer use, irrigation and water management, plant protection, input use, cultural practices, cropping systems, and related technology; fruits, vegetables and ornamental plants; social forestry; farm management; and production economics.

5. **Animal Production :** Livestock production and management, cattle, buffaloes, goats, sheep, etc.; dairy and dairy products; poultry; fisheries; feeds and fodder; and animal disease and health care.

6. **Rural Engineering** : Agricultural tools, implements and machinery, use and maintenance; energy, bio-energy, solar energy, wind, electricity, agricultural wastes and waste utilization.

7. **Agro-Industries** : Agricultural by-products and their utilization, post-harvest technology, foods, fruits and vegetables, processing and preservation; Agro-industries based on available commodities; sericulture, apiculture; various cottage and small scale industries to meet rural needs and for employment generation.

8. **Rural Health and Nutrition** : Nutrition; child development, family planning, home management, health care.

9. **Rural Economics**: Farm management, agricultural cooperation, processing and marketing, agricultural credit, banking and financial institutions input and other services, employment, distribution of rural wealth in equality, etc.

10. **Agricultural Business Management** : Quantitative techniques, management science and its applications, managerial economics, market management, production management, financial management, management of cooperatives, quantitative methods for decision making, special programmes in agricultural business management.

11. **Rural Development Management** : Rural environment: farmers organizations: alternative strategies of rural development; management, integrative rural

(*Contd. on page* 9)

Wanted : A New Strategy for Financing Higher Education-I

K.K. Balachander*

The Background

Ever since 1950, higher education has become the fastest growing part of the education system in India. The policy-makers then believed, or were led to believe, that only through faster expansion of higher education, they can build middle and higher level manpower for economic modernisation. The experience of advanced countries was often cited to support the (higher) education-economic growth causality. The idea of 'catching up' with advanced countries exerted a greater influence on the thinking of the leadership. Pandit Nehru had once remarked that India must "learn to run before she learned to walk". No wonder that countries like India were then described as 'century-skippers' as far as their economic aspirations were concerned ! They sought to achieve greater results in a much shorter time than was taken by the advanced nations in their earlier stages of development.

As Raymond Lyons put it, the mutual comprehension between politicians, professional economists and educators based on a measure of understanding of common needs and interests reached its apthesis in the 1950s and 1960s when in economic growth terms, as the poet might have said "all was wonder and a wild delight." With favourable prospects for economic growth, it seemed likely that the need for skilled workers, experts and educated people would increase almost geometrically. In its eagerness to avoid shortages of trained manpower in the course of industrialisation, and to overcome centuries of neglect of human resources during the colonial rule, the Government of India launched on a 'crash' programme to expand the educational system, particularly the higher education sector. The policy-makers thought in terms of 'leaps' rather than 'steps' in building a modern higher educational system in the country. Besides, the transformation of the elite' higher educational system, which the country had inherited from the British Government, into that of a broader one befitting a democratic nation was a pre-Independence promise made by India's many political leaders. This meant that the Government had to gear the expansion of higher education not only to meet the demand for highly qualified manpower necessary for the newly initiated programme of economic development, but also the social demand arising from rising expectations of the young people. Considering the vastness of the country, the age-group population to be covered, the scarce resources and the comparative costliness of higher education, the task appeared to be a Herculean one, but that did not deter the Government of India from making an effort. It was naturally forced to funnel more and more funds into the higher education sector. Substantial progress has been made since 1950 in increasing the enrolment in higher education—the rate of growth in enrolment has been much faster than the rate of growth of the economy. By 1980-81, nearly 80 per cent of the expenditure on higher education was met with Government assistance. Higher education had come to account for about one-third of the expenditure on education (as a whole) in majority of the States.

Looking at the organisational structure of the higher education system, the country has built, over the years, one of the largest systems in the world, and is maintaining over 130 universities, 15 institutions—deemed-to-be universities, about 5500 colleges with an intake of nearly 35 lakh students. The rate of growth of enrolment has been as high as 10 per cent per annum during the period 1950-51 to 1975-76. In the sixties, it was 12.5 per cent. Enrolment is likely to rise at the rate of 6-7 per cent per year in the years ahead.

It has to be noted that higher education expanded at a rapid pace over the years long before elementary education became universal. As late J P Naik put it (**The Education Commission and After,** 1982): "The post-Independence period may be described literally as the "era of higher education" in Indian educational history...The University Education Commission was the first to be appointed by the Government of Free India; and throughout the past

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**Secretary, Technical Coordinator, ULP, Department of Economics, University of Bombay, Bombay-400098.*

thirty years higher education has received the highest priority, the best attention and proportionately large allocation of funds. It is also the one sector of education which has expanded most." The experiences of Indian States in this respect are not too different, though there are some deviations from the general patterns and trends. Whether such a fast expansion is in accordance with the norms of the economy and whether it is consistent with the development in other sectors of the economy (and lower levels of education), is altogether a different question. But one consequence of such a development has unmistakably been in respect of higher educational finances and the behaviour of individual sources of finance. Some of these aspects are examined in the sections that follow, some policy decisions that are urgently needed in respect of financing higher education are suggested.

II

Sources of Finance

The present system of financing higher education in India can be described as a 'multi-source' system, or a 'mixed system'. The different sources that contribute to higher educational expenditure are : (a) Government funds—Central and State Governments, (b) Fees that the students pay, (c) University and Local Body funds, and (d) funds from other private sources such as Endowments, Donations, Gifts, etc. This kind of a multi-source-system or plurality of sources of financing, was introduced in India during the British period as it was thought it had several advantages:

(i) In a situation of steady expansion of higher education, Government funds alone may be found to be inadequate. Under a multi-source financing system, the total volume of assistance will be increased. (When the grant-in-aid system was introduced in India during the British period, it was stated that public funds should be utilised in such a way as would encourage the establishment/maintenance of more and more institutions by private agencies, philanthropic bodies and individual users (through fees). The Wood's Despatch (1854) believed that a far more rapid spread and progress of education would result by thus drawing support from non-governmental sources than would follow by a mere increase of expenditure by the Government.

(ii) Since the students (or their parents/guardian will share the expenditure by way of fees this will minimize tax-payer resistance especially from non-users of higher education for providing funds to higher education.

(iii) Under this system, apart from contributions made by the Government and the individual users, there is scope for contributions to flow from other private sources as well in the form of donations, endowments, gifts, scholarships, etc. from voluntary bodies, trusts, large companies/corporations, private philanthrophic individuals and so on. Dependence on income from a single source, it was felt, might affect the inducement to private organisations/individuals, etc. to come forward with funds.

(iv) The institutions will not be subjected to increasing Government scrutiny of costs and programmes—too much of Government involvement as in a totally Government-financed system—in monitoring of costs as may threaten diversity and flexibility resulting in a monotonous uniformity in programmes. According to John Stuart Mill, an educational system wholly controlled by the State would be a "mere contrivance for moulding people to be exactly like one another" and would "establish a despotism over the mind leading by natural tendency to one over the body......The Government must claim no monopoly for its education, either in the lower or the higher branches, must exert neither authority nor influence......"

(v) Under this system, there is less likelihood of the students taking a complacent attitude and extending their years of study. The fact that students are willingly sharing some part of the expenditure on their higher education will surely create some seriousness among them with regard to their studies and make an invaluable contribution towards raising the standards.

III

The Financial Crisis

Government assistance undoubtedly has played an important role in the development of higher education. But the enthusiasm for faster expansion has brought in its wake some serious problems and challenges, and these are now coming in the way of the very progress of higher education. Over the years an increasing dependence on the Government for financing higher education has emerged. Government contribution formed the principal source of income, and in some States, it has become the single most important source. The extent of subsidisation showed a continuous rising trend in all the constituents of higher education which, in turn, must have further raised the demand for higher education. The mobilisation of non-governmental private resources got considerably slackened over the years, especially since the beginning of the sixties. The process of expansion, thus, was accompanied by a widening gap between public and private funding of higher education. There has been no alignment between the expenditure on higher education and the fees paid by students, particularly in Professional/Technical categories of higher education.

A financial crisis loomed large, since late seventies, as a result of the Government finding it increasingly difficult to meet the growing demands of the system, and the contributions from non-governmental private sources fast drying up. The country has now to face the dilemma of satisfying the growing aspirations of its youth for higher education, on the one hand, and its inability to meet it with its meagre resources, on the other.

Though Government funds for higher education increased faster than for school education since Independence, because of the rapid rise in enrolment and multiplicity of institutions, such funds have however got thinned out over a larger number and wider area. The establishment of each university or college has been a step in the direction of starving the existing one. Also adequate relief is not provided to neutralise the impact of inflation. The expenditure on higher education has not been in tune with the requirement of rising enrolment during the post-Independence period, thus resulting in inadequacy of finances considered from the per student realisation point of view. In short, enrolment is guided by different sets of considerations which do not necessarily govern the flow of funds. The two seem to grow independent of each other. The 'open door' policy, combined with almost free higher education, has led to a financial crisis. The effect of the process of the decline in the value of the resources became painfully clear as expansion continued to meet popular demand. The dilution of resources in per student terms, which has taken place owing to rapid rise in numbers and prices, could not have but caused definite erosion in academic standards. In the process, several gaps have appeared in physical facilities (what is found in countries like India, as an expert remarked, is an antideluvian technology which would not have survived for an instant in any other economic sector). The per student grant for libraries, labs and sports has stayed almost stationary during the last one decade despite galloping costs.

Any measure to expand higher education opportunities without prior examination of its cost consequencies (and impact on quality, would prove to be self-defeating. A sound financial base is the *sine qua non* for building a modern higher education system. It appears the Government had not examined sufficiently in advance the hard reality of the implications of the rapid expansion of higher education. The cost of higher education is bound to rise steadily, what with the demand for better pay-scales for teachers, and the higher prices that the institutions have to pay for every other service and facility. The gap between the expected requirements and the possible budgetary allocation of resources from public funds will be substantial in the years to come, and if the same pattern of financing continued, higher educational administrators will have to do some tight rope walking in matching requirements with the available funds.

There is more to higher education than just opening of a dozen new colleges or the starting of a few universities, as the Document **Challenge of Education** (1985) had rightly put it. It further states: "Neither quantitative nor qualitative improvement can be effected without provision of resources. In fact the resource implications of qualitative changes in education would be far greater than that of mere quantitative expansion because in such an initiative additional per unit requirements for quality upgradation will be needed for new as well as existing institutions." (p. 62).

In the process of rapid expansion, a system almost dependent on the Government has been created which, in turn, has sapped private contributions. Was that the role envisaged for private and public agencies while a mixed financing system was formulated and introduced in the country for the development of higher education? This system was adopted originally with the idea that both Government and private contributors would play a complimentary role.

The New Priorities

The possibility of the Government coming to the aid of the higher education sector in a big way at the cost of other pressing governmental activities and also the development of lower levels of education, particularly the elementary level, seems most unlikely in the years ahead. There appears to exist a feeling among policy-makers that higher education has already got more than its fair share. They are now veering round to the view that illiteracy is the real stumbling block to economic growth, and hence priority should be given to universal elementary schooling and adult education. In fact, the most glaring failure of our educational system is evidenced in the poor literacy rates. Although the proportion of illiterates is falling, in absolute terms their numbers are increasing. We have now more illiterates in India, than the total population at the time of Independence! According to the World Bank estimates, India would have the largest concentration of illeterate population in the world by 2000 A.D. If the present trend continues, India may soon lead in the number of graduates produced among the developing countries, though its literacy rate may remain the lowest! In the recently released **National Policy on Education** (1986), the Government of India has committed itself to the main tasks of strengthening the base of the educational pyramid, i.e. elementary education, tackling the problem of adult illiteracy, expanding the provision for vocational education, etc. As far as higher education is concerned, the Government intends taking all steps to protect the system from degradation, and raise standards to highest levels which could be found in advanced countries, and thus make the system "more dynamic as never before." Thus, after the storm and stress of adolescence in which a great deal was done without a thought to the possible consequences, there appears to be a change in the offing towards thoughtful maturity and reappraisal with regard to qualitative improvement, and not just quantitative expansion.

The new priorities, which the Government hopes to pursue simultaneously during the next 13 years, will assuredly entail heavy expenditure. The difficulty is how to raise sufficient resources to fund these reforms so that they do not get stalled in the track well before the journey is completed. Also resource mobilisation will be a serious problem if the present rate of growth of the economy is any indication. Anyway there appears to be a general agreement among many in the country that the crucial areas which need urgent attention is elementary and adult education so that illiteracy could be eradicated by 2000 A.D. Here are the two fields where resource constraint cannot be an excute for lack of sustained endeavour. Education at the first level is seen in many countries as the first requisite for a development-oriented education strategy. Further postponement of the needs and requirements of this level of education could lead to a conflict with haman rights in respect of education. Giving importance to it by upgrading Government resources, though belated, is well-justified.

All this would mean a slow down in the rate of growth of Government contribution to higher education which is bound to exert a progressive squeeze on the system, a squeeze compounded by rising units. This makes inevitable a reappraisal of the policy of not only faster expansion of higher education, but also the present system of financing it. In this context a change in the existing financial arrangement which will reduce the overdependence on the scarce resources of the Government assumes great importance. An increasing support from private (non-governmental) sources will have to be sought in the years to come if the system has to survive.

IV

The Remedies

A Realistic Fee Policy

In the light of the severe financial constraints, it is necessary to have a fresh look at the existing pattern of financing of higher education. In this context, a change in the existing financial arrangement which will reduce over-dependence on the resources of the Government assumes great importance. A reappraisal of the present fee-rate policy has, therefore, become inevitable. The universities/colleges are at present levying fees that were fixed in the fifties. The existing rates are very low by any reckoning. While the cost of everything else has been rising, fees have remained stationary for quite some years. If the present trend continues, fees as a source of higher educational finance may loose their importance in the near future. At the time of Independence, fees constituted about 45 per cent of the direct expenditure ; this proportion has now declined to 12 per cent. At the same time, the expenditure has gone up by over twenty times. The financial crisis in the higher education sector could have been mitigated to a considerable extent had there been a gradual hike in the fee-rates. Instead of a mixed public-private financed system, almost a totally publicly-financed (subsidised) higher education system has been emerging over the years. A system of liberal Government subsidy also exist in many other countries, but there it is coupled with a policy of rationing the number of places in higher education either directly in terms of numbers or, indirectly, via admission standards. The Government of India however, took the stand that every effort should be made to provide admission to all (eligible) students who desired to study further in institutions of higher education, and liberal subsidies be extended to them.

The argument for raising fee-rates stems not only from the viewpoint of building more funds but also from other factors :

(a) The policy of extension of liberal subsidy, indiscriminately to all alike (as reflected in low uniform fee-rates) has mostly benefited those with a favourable socio-economic background, forming nearly 80 per cent of total enrolment. This is more so in the case of the professional/technical category of higher education. The transformation of this largely elitist system into one with a more egalitarian base, remain largely unfulfilled in spite of efforts to change or dilute it. The better-off group, starting with a social and economic edge over the rest of the people has taken advantage to a much greater extent of the existing provisions of higher education as majority of the children belonging to the economically weaker sections do not even cross the primary school stage. Despite the growth of the school system, educational benefits have not reached the mass of the people. Poverty and social deprivation have inhibited them to participate in education. Therefore, keeping the doors of higher educational institutions wide open, and extending liberal subsidy, will be meaningless to this section. Also the fact that higher education is mostly subsidised from revenues raised through indirect taxes, which impinge more on the poor (and the majority of whom being non-users of higher education), does mean that it is this section that virtually subsidises the higher education of those belonging to middle and upper income levels. Thus the policy of uniform subsidy, as is reflected in low fee rates to all, irrespective of the students' economic status, has tended to endorse and/or aggravate inequality rather than reducing it. The participation of students by economic position when viewed in the context of heavily subsidised higher education, leads one to conclude that subsidisation is a hidden bonus, or a windfall, to those who can perfectly pay well, even in full, for their higher education.

(b) The rationale for a policy of government investment in higher education is also judged by the social rate of return. A number of estimates of rates of return have been made by researchers in India which show that the social rate of return to higher education is a good deal lower than the private rate; in other words, the community gets back less than what the individual gains from higher education. The provision of liberal subsidies (particularly for professional/technical higher education, i.e. about 80-85 per cent of the expenditure) reduces the private cost and thereby raises the private return. Considering the fact that the private return is much higher than the social return, cognisance should definitely be taken of it while determining the sharing of the cost burden between the Government and the students. This imbalance between the two rates can be corrected by raising fee-rates. The existing fee-structure in India does not take into account the higher income earning opportunities provided by many professional/technical courses. Those who opt for specialised courses like medicine, engineering, etc. do so in order or improve their economic status and the rewarding system does favour such candidates the most. And paradoxically, the fee income forms a smaller part of (direct) expenditure in such lines of higher education which generate prospects of larger private gains. The demand for admission to medical and engineering colleges in some Indian States outstrips the number of seats that can be provided, and this has led to the most disconcerting system of collecting high capitation fees by private institutions providing such courses. The very fact that a good number of prospective students are willing to pay this price shows that the private gains must be far exceeding the money that they spend. This surely strengthens the case for a system under which the recipients of such professional training meet a major part of the expenditure on them, instead of leaving the common tax-payer to pickup the bill.

(c) Another related aspect of this problem is that quite a sizeable proportion of highly trained persons in India, at least 10 per cent, after receiving their higher education in India at a high cost, are seeking outlets abroad. They join the brain tank housed in the distance at the end of the journey, motivated by the enormous monetary compensations offered. Today Indian engineers, scientists and doctors are in great demand in the U.S.A., the U.K., and the gulf countries. According to a W.H.O. study, India happens to be the largest donor of medical manpower in the world. Out of 100 boys trained in the Indian IITs, 25 at least settle abroad. There are also other highly qualified people employed in banks and private institutions outside India. Thus the considerable public investment made on them ultimately benefits other countries instead of serving the large mass of the people of their own country. Is it not clearly a case of a less-advanced country extending aid indirectly in the form of skilled and trained manpower to advanced countries? (It may also be noted in this context that in some advanced countries, those who come from outside are required to pay a very high rate of fee).

There is therefore an urgent need for a review of the prevailing pattern of financing higher education, especially the contribution by way of fees. It is difficult to deny the economic and other arguments for a hike in the fee-rates which bear some reasonable relationship with the cost of providing the courses concerned—at least for courses with better employment opportunities and income prospects. Such a reform is all the more necessary because the vast bulk of the system of higher education at present caters mostly to urban elites and the haves. The social cost is high and the social benefit and the imputed externalities low. So, why continue to provide across-the-board subsidies to all regardless of income (or academic background) ? Should we persist with such a 'monstrous' system where the poor masses pay for the education of the not-so-poor who, moreover, in turn, use their knowledge and skill mostly to their personal advantage? Those who have the means to pay should be made to pay more and those who do not have the means to pay, should receive adequate financial support from the State. This will not only enable raising of the internal resources of higher educational institutions but also extending more scholarships/freeships to the deserving poor, underprivileged and intelligent students. The institutions have, however, to clearly identify the students belonging to these groups for such special treatment.

It is recognised in the NEP Document that "there is no justification for subsidising higher education to the extent it is being done today. The quantum and nature of subsidisation will have to be related either to merit or to the dictates of social justice", the Document admits. A new World Bank Report **Financing Education in Developing Countries : An Exploration of Policy Options** shows that if governments continue to bear most or all of the cost, there will not be enough resources in the system to meet all the demand. By selectively introducing an increasing user fees for some kinds of education, and by encouraging private sector participation, education could expand and more people could be served. The policies described in the Report have been formulated in the context of inadequacy of existing resources and the exclusion of many people from the education system. A few months back, the Prime Minister of India, while addressing a specially convened meeting of the National Development Council had hinted that Government would have to take a second look at the subsidy extended to higher education especially the professional/technical category. "The scale at which we do it today is totally disproportionate when we look at primary and secondary education", he said, and added that "students would have to pay a reasonable proportion of the actual cost involved. However, the weaker sections would have to be helped and protected in this." Gandhiji, who gave us the most revolutionary principles of education, had pleaded for a higher education system which is self-financing for a number of reasons. He had expressed his opposition to all higher education being paid for from the general revenues. Except for the education of those whose services the State needs, for all other branches of higher learning, he desired that private effort should be encouraged.

Because of the existence of social benefits (necessitating some Government assistance along with contribution from students), making the student pay in full what is being spent on him may not be justifiable. This aspect must also be given some consideration while attempting to alter the existing mode of sharing of the cost burden between the tax-payers and the students—(although there is still no method to attribute with a fair degree of exactness the external (social) benefits). For the 'Plus Three' part of the higher education stage and at postgraduate levels, the fee-rates may be raised gradually in such a way that the contribution from this source meets at leart 40-45 per cent or 50 per cent of the direct expenditure (instead of the 10-12 per cent as at present). For the first two years of higher education, i.e. the present 'plus two' stage, fee-rates may be kept low as this part could be considered an extension of the school stage. The above arrangement will enable the institutions to cover through fees a good portion (nearly two-thirds) of the expenditure on salaries of teachers. The share of the contribution from other private sources (such as donations. endowments, etc.) desirably should be around 15 per cent: thus making the total share from all non-governmental (private) sources around 65 per cent. The Government's share would be around 35-40 of the direct expenditure. In fact. this was the range of sharing pattern that prevailed in late 40s in All-India. What is suggested here is only going back gradually—say over the next five years—to that earlier arrangement of sharing the expenditure so that the students continue to meet the same percentage of direct expenditure that they did 40 years ago. For some professional courses like medicine. engineering, etc. wherein the recurring expenditure per student is relatively high, a portion of the government subsidy (say half of it) could be treated as a loan recoverable (with proper monitoring devices) from the future earnings of the students (which are likely to be high as a result of their specialisation in these fields). There are also other activities like provision of hostel accommodation, conduct of examinations, etc., wherein the charges are amenable to a better alignment with costs. Adequate provision for financial support will of course have to be made available to the students belonging to lower income and really meritorious groups of students. This will certainly be an improvement over the existing situation, almost a breakthrough.

Sincere efforts, either by the Government or the institutions, to educate public opinion on the need for a fee rise has not so far been made. The parents/guardians/students and the community have only a hazy idea of higher educational finances; majority of them may not even be aware of the exact quantum (which is quite large) of the subsidy involved in providing the different courses in higher education, especially the professional/technical types. If the true resource costs of these courses, as against private costs to students/parents are publicised well, they would radically alter the debate about fees and help clarifying the inequities and inefficiencies underlying the present sharing arrangement. Some developing countries have started drawing attention of the public to the fact that college/university student should not demand higher education at State expense as a right: the fact that they have survived long enough in the school level for gaining entry subsequently into higher education itself shows that their parents are very likely to have been well-to-do and accordingly can be expected to make substantial contribution to their children's higher education. If this is true in India too, providing liberal subsidy to all alike is against the very tenets of egalitarianism. Justifying the case for a rise in tuition fees in countries like India, Mark Blaug states: "When we add the fact that in India, as elsewhere, half of the entrants to higher education are likely to have gained their entry qualifications in private secondary schools that charge fees upto Rs. 2000 per year, the clamour not to raise fees and even to lower them can be seen as a demand of the middle class parents to get for free something that they could perfectly well pay for." Blaug pleads for publicising all such facts and with it "the true resource costs of university education as against the private costs to students and parents." □

[To be Concluded]

EDUCATIONAL NEEDS FOR INTEGRATED RURAL DEVELOPMENT

(Contd. from page 2)

development management.

12. Project planning, execution and evaluation : Concepts of planning, micro and macro-planning programme planning techniques, functions of executives, methods of project evaluation, manpower planning, constraint identification, etc.

13. Development Communication—Transfer of Technology : Rural communication organization, process and methods of communication, diffusion and rural technology, teaching aids, various agencies involved in agricultural extention, etc.

14. Project : The Agricultural Universities in the country have the necessary infrastructure for several of the subject-wise studies. What is needed is the filling up of the gaps and the initiation of an interdisciplinary degree programme to meet the diverse needs of managing rural development on sound and scientific lines. □

Management of Agricultural Change in Eastern Uttar Pradesh

"Gradually, emphasis in our educational planning must shift from individual crops to promotion of viable farming system. In addition, more systematic attention ought to be paid to promoting sufficient and economical use of all scarce inputs. Unless determined efforts are made to reduce cost of production of food, surplus food stocks and malnutrition may coexist from a long time to come", said Dr. Manmohan Singh, Deputy Chairman, Planning Commission while delivering the Convocation Address at the fourth convocation of Narendra Deva University of Agriculture and Technology. Excerpts :

Convocation

Uttar Pradesh is the most populous State of the Union. Thus, the pace of economic development in Uttar Pradesh has a major impact on the overall performance of the Indian economy. Since 1974-75, there has been an acceleration in the rate of growth of the economy of Uttar Pradesh. However, there is still a vast untapped potential. Given the great dependence of Uttar Pradesh's economy on agriculture, agricultural performance has a critical influence on the overall performance of the State's economy. There is a visible evidence of new winds of change and fresh modernising impulses are now operating in the agricultural economy of the State. However, there is an urgent need to push ahead at a much faster pace than ever before.

The eastern region of Uttar Pradesh, which accounts for nearly 38 per cent of its population, happens to be one of the three backward regions of the State. The modernisation and faster expansion of the agricultural economy of this region has to form an essential constituent of any viable growth strategy for Uttar Pradesh. This region has mainly alluvial soil which are very fertile. It receives adequate annual rainfall in the range of 1200-1400 mm. Thus, potentially this region should provide a basis for a prosperous agriculture. The region has also got ample resources of groundwater, Yet, agricultural productivity in this region is much lower than that of western region of the State is also lower than the average productivity of the State as a whole.

Much thought is being given to raising the productivity of agriculture in this region. Your University can play a very important role in working out location-specific development strategies for different parts of this region. I lay emphasis on location-specific strategies because even in the eastern region there is a considerable diversity of agro-climatic conditions. For example, problems of soil salinity alkalinity in the districts of Allahabad, Sultanpur, Azamgarh, Pratapgarh and Jaunpur will demand a different approach from the one applicable to the drought-prone district of Mirzapur or some parts of Allahabad and Varanasi districts. Similarly, flood-prone areas in the region require a different approach than the one required for dry-land agriculture. Based on a detailed inventory of resources and malady remedy analysis, this university can assist the State Government in preparing agricultural development plans for all the fifteen districts of the region.

Proper planning of land and water use must constitute the core of the new location-specific agricultural development strategies. Gradually, emphasis in our agricultural planning must shift from individual crops to promotion of viable farming system. In addition, more systematic attention ought to be paid to promoting efficient and economical use of all scarce inputs. Unless determined efforts are made to reduce the cost of production of food, surplus food stocks and malnutrition may coexist for a long time to come.

I have a strong feeling that our agricultural practices show a very inadequate awareness of the need to promote economical and efficient use of scarce water resources. In the same manner not much attention has been paid to promote efficient and economical use of fertilisers. It has been estimated that currently only 30 to 40 per cent of the applied nitrogen is actually utilised by the plants. The balance is lost due to denitrification and leaching. There is thus an urgent need to strengthen research on nitrogen-use efficiency, particularly under humid conditions. Technologies designed to promote efficient and economical use of scarce resources can be of particular assistance in improving the viability of resource-poor small and marginal farmers who constitute a great majority of our peasantry.

The new agricultural technologies involving use of high yielding varieties of seeds have greatly transformed the outlook for Indian agriculture. However, the impact of the new technology on rice farming has been much less than in the case of wheat. This is partly due to the fact that unlike wheat, which is grown under relatively homogenous agro-climatic conditions, paddy lands are characterised by a very considerable diversity of agro-climatic conditions. It is, therefore, necessary to intensify the research efforts for evolving appropriate varieties of paddy suited to the needs of diverse agro-climatic conditions. Rice is the principal kharif crop of the eastern region of the State but the yield is less than the average for the State. The Seventh Plan lays great emphasis on improving the production and productivity of rice in the Eastern States. A special centrally-sponsored programme is now in operation which covers 102 blocks in the eastern Uttar Pradesh. As part of the strategy to increase the productivity of rice in this region, special attention needs to be paid to evolving varieties which grow in deep water conditions in the flood-prone areas.

There is an urgent need to increase the productivity of sugarcane since out of 94 sugar factories in the State in 1985, 41 happened to be in the eastern region and sugarcane yields in this region are lower than the State average.

The Seventh Plan lays special emphasis on increasing the production of pulses and oilseeds. For this purpose, among other things, it is necessary to intensify research leading to high yielding, short duration, resistant to insect and pests and nutritionally acceptable varieties of oilseeds and pulses.

As against population density of 216 for India as a whole in 1981, Uttar Pradesh had a density of 377 persons per square kilometre. The population density in the eastern region of the State was 485. Because of such heavy population pressure on land, development activities requiring little or no use of land deserve special attention. In this context, development of horticulture, animal husbandry, fisheries and social forestry assumes great significance. These activities offer considerable potential but they require a strong back-up of research and extension. The region's geographical and climatic conditions are highly conducive to the cultivation of a great variety of horticultural crops and fruits. According to the 1981 census, the region had 195.13 lakh cattle but the breed is poor and yield of milch cattle is low. The area under forests is about 10 per cent. Although it may not be possible to increase this area significantly, there is considerable scope for enhancing the quality of forest cover through expansion of social forestry designed to meet the needs of fuel, fodder and timber of the rural areas. The degradation of the environment has assumed alarming proportions and issues relating to ecological balance and stability must figure prominently on the agenda for action. In all these areas, your University can be a pace setter for new forward-looking development thrusts.

I gather from the report of the Vice-Chancellor that your University has evolved several high-yielding varieties especially of paddy which have been readily accepted by the farmers. I am also very happy to learn that the University is multiplying and processing seeds of high-yielding varieties to meet the seed requirements of farmers and other agencies. However, there is a vast unfinished business. We have to expand very substantially the production of quality seeds. We have to be alert and must be always on the lookout for new and superior varieties which will have better yield characteristics and will also be less vulnerable to environmental stresses and strains.

An effective extension service is an essential condition for transferring useful knowledge from our research laboratories to the farmers' fields. The training and visit system of extension which has recently been introduced in Uttar Pradesh is designed to strengthen technical competence of the extension personnel and establish closer links between them and the farming community. The modern communication revolution offers exciting opportunities for communicating development messages. I am very happy that the extension education wing of the University, through its Farm Advisory Training and Information and Communication Services has drawn up a large scale programme for all the fifteen districts of eastern Uttar Pradesh.

Our development programmes must pay particular attention to the needs of our women. A majority of our women stay in villages and are actively engaged in farming as a family occupation. They take a big hand in farm operations beginning with the preparation of fields for sowing, in harvesting, collection of grains and storing them in godowns. The upkeep and maintenance of animals is their sole responsibility. It will not be an exaggeration to say that rural women are busy from dawn to dusk, with one or other farm occupation. After the day's hard work they have to undertake the additional responsibility of cooking and feeding their families.

Despite this massive contribution, women do not receive adequate share of the benefits of our development programmes. The state of social and economic well-being of our women should be obvious from the fact that unlike most other countries, women constitute less than 50 per cent of India's population. In 1971, there were 931 women per 1000 men and in 1981 this ratio improved marginally to 934. In Uttar Pradesh, the sex ratio is still more unfavourable. In 1971, the state had 879 women per 1000 men and in 1981 the ratio was 885. We must adopt effective social and economic measures to reverse this trend.

Illiteracy among women is major barrier to the modernisation of our rural economy. The literacy rate in the eastern region of Uttar Pradesh which was 24.28 per cent in 1981 is much lower than the national average. However, it is still more disappointing that while the rate of literacy for males was 37.6 per cent, it was only 10.73 per cent for females. The new education policy approved last year by the National Development Council lays special emphasis on the education of women. I do hope that the Government of Uttar Pradesh will adopt a more aggressive approach to universalise the access to elementary education. I am very happy to learn that this University has started imparting education in home science where mostly rural girls are enrolled. I do hope that after completing their education these girls will go back to villages and create a climate favourable to the adoption of improved practices relating to health, family welfare, nutrition and farming.

Agricultural research, education and extension have been assigned a very important role in modernising our agriculture. Because of the predominance of small and marginal farmers, improving their productivity must be the priority concern in all our research programmes. However, the modernisation of agriculture requires action on several fronts. Thus, extension can not achieve positive results if not backed by adequate and timely availability of inputs such as seeds, fertilizers and pesticides. Expansion of irrigation and efficient use of irrigation potential can greatly enhance the former's incentive to use costly inputs such as fertilizers and pesticides. Rural electrification can provide a powerful incentive for increased exploitation of the groundwater potential.

Agricultural credit system must be kept in good shape to enable farmers to invest in farm improvements. In several parts of our country, the phenomenon of mounting overdues in the agricultural credit system is proving to be a major barrier to the spread of mapules of modernisation in our rural economy. These tendencies must be effectively curbed. Institutional reforms designed to protect the interests of share croppers and to promote consolidation of holdings are also essential for the modernisation of agriculture. At the same time, arrangements for the marketing of produce also need to be improved so as to provide farmers a remunerative return for their effort. Expansion of the network of rural roads, rural godowns and the setting up of regulated markets and effective arrangements for procurement of surplus produce at remunerative prices are other important elements of a forward-looking agricultural policy. But it is equally necessary to adopt efficient post-harvest technologies so as to increase the farmer's share of the price paid by the final consumer. An efficient organisation of agro-processing activities and a productive use and recycling of agricultural wastes and residues can contribute a good deal in increasing incomes in rural areas. In all these matters, the State Government has, no doubt, a major responsibility. The agricultural economy of the eastern region of Uttar Pradesh is certainly on the move. The Seventh Plan of U.P. contains many constructive thrusts to further modernise the rural economy of Eastern U.P. at a faster pace. Your University must act as an active partner in this gigantic national effort. ☐

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PG Courses in Footwear Science

The Academic Council of the Anna University has approved introduction of a two-semester postgraduate diploma course and a three-semester M. Tech degree Course in Footwear Science and Engineering from the current academic session. It has also approved the regulations, subjects of study and detailed syllabi for the proposed eight semester B.E. in Mining Engineering.

According to Dr. V.C. Kulandaiswamy, Vice-Chancellor, the Central Leather Research Institute had agreed to collaborate with the University in offering the industry-related footwear science course and the Neyveli Lignite Corporation in running the degree programme in mining.

Two New Colleges for Parmar University

The Y.S. Parmar University of Horticulture and Forestry has decided to set up two new colleges—the College of Horticulture and the College of Forestry. Both the colleges are expected to start functioning from the current academic session.

The College of Horticulture will have departments of Fruit Culture & Orchard Management, Fruit Breeding & Genetic Resources, Post-Harvest Technology, Vegetable Crops and Floriculture.

The College of Forestry will comprise three departments, viz., Department of Sericulture & Agro Forestry, Department of Resource Mangement and the Department of Tree Improvement and Genetic Resources.

Seats Reserved for Pondy Students

The Agricultural University at Bangalore is reported to have earmarked ten seats in agricultural courses for the students from Podicherry. Likewise, the Tamil Nadu Agricultural University has set apart five seats in B.V.Sc, three in Agricultural (Engineering) and one in Horticulture.

Two seats for M.B.B.S. course and one seat for B. Pharm in Kerala and one B.Sc. (Fisheries) seat in Bangalore have also been reserved for Pondy students. The Gujarat

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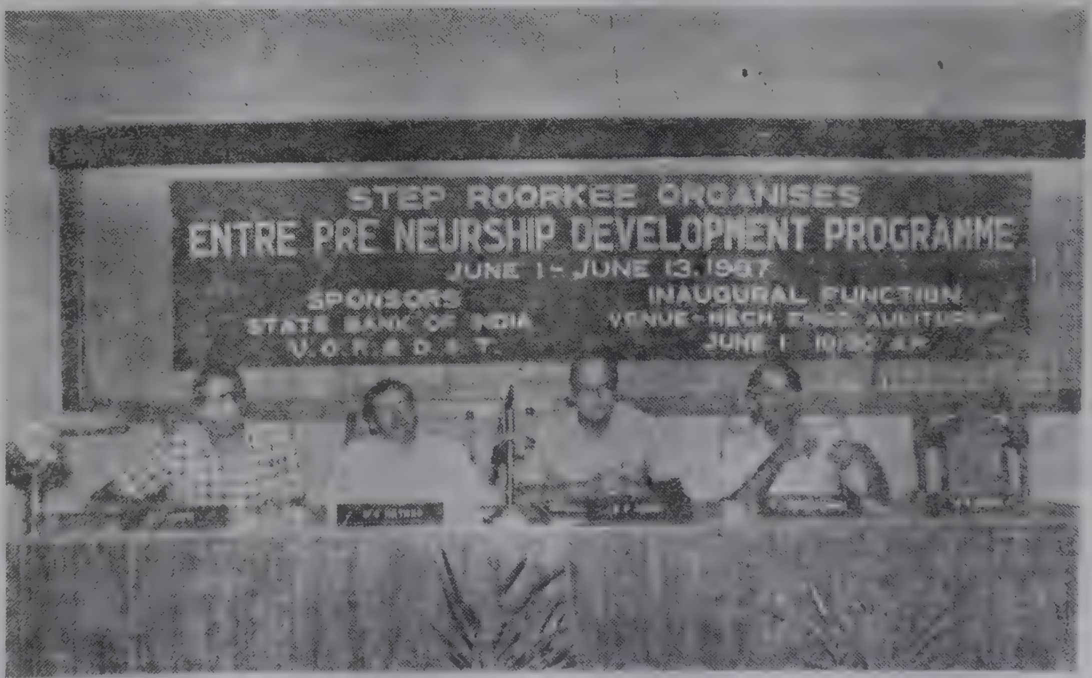
Entrepreneurship Development Programme

Science & Technology Entrepreneurship Park, Roorkee organised a two-week Entrepreneurship Development Programme for the students of Roorkee University from June 1-13, 1987. Sponsored by the University of Roorkee, State Bank of India and DST, the programme was inaugurated by Padmashri C.P. Joshi, Chairman, U.P. Electronics Corporation Ltd., Lucknow. Prof. N.C. Mathur, Vice-Chancellor, University of Roorkee, presided while Sri S.J. Maheshwari, Chief Regional Manager, State Bank of India, Meerut, delivered the keynote address.

The participants were given Achievement Motivation Training (AMT) which prepared the background for further training on entrepreneurship development and helped to bring out positive aspects of their personality. Technical sessions were held on product identification, marketing, financial management, inventory control and management, production management, sales management, banking and financial schemes and project report preparation.

Market survey was also conducted and prizes for the best (i) market survey report; (ii) management games, and (iii) project report on STES were given.

Over 20 participants which included engineering graduates, postgraduates and teachers/officers attended the programme.



Sitting from left to right are : Dr. M.P. Jain, Director, STEP, Roorkee, Dr. N.C. Mathur, Vice-Chancellor, University of Roorkee, Padmashri C.P. Joshi, Chairman, U.P. Electronics Corporation Ltd., Lucknow, and Shri S.J. Maheshwari, Chief Regional Manager, State Bank of India, Meerut.

University is also reported to have placed at the disposal of the Pondicherry Government one seat in dairy technology course.

Ramanujan Professorship for Prof. Sreekantan

Prof. B.V. Sreekantan, former Director of the Tata Institute of Fundamental Research (TIFR), Bombay has been selected for the first Ramanujan Professorship Award of the Indian National Science Academy (INSA). The award, instituted by the Academy this year to mark the birth centenary of the mathematician Srinivas Ramanujan, carries a monthly stipend of Rs. 3,500/- alongwith all the allowances permitted by Indian Institution where the awardee chooses to work. A contingency grant of Rs. 2000 per annum is also included in the award. Prof. Sreekantan is likely to work in the TIFR itself in the fields of cosmic rays and high energy physics which have been his major areas of work.

Autonomous Status for 500 Colleges

The University Grants Commission (UGC) has decided to accord autonomous status to 500 colleges in the country during this year. This was revealed by Prof. K. Satchidananda Murty, Vice-Chairman of the UGC, in Pondicherry recently. He said that 50 academic staff colleges, including one in Pondicherry, would also be started. The UGC, he added, had finalised the guidelines for opening of State Councils for higher education which would act as an effective mechanism to access the working of the Univerties.

Vocational Courses for Women Drop-Outs

The H.J. College of Education, Bombay, proposes to introduce income-generating courses for women drop-outs aged 16 and above. These courses will be conducted free of cost and the candidates will be taught to repair watches, clocks and electrical appliances, book-binding, screen printing, doll-making and art work. After the satisfactory completion of the course, certificates will be awarded to the candidates. Further details can he had from the Principal, H.J. College of Education, 16th Road, Khar, Bombay-400052.

Another Engg. College for Punjab

The Punjab Government is understood to have decided to set up an engineering college at Bhatinda. Estimated to cost Rs. 15 crores, the proposed college would cater to technical education needs of the students of Bhatinda Faridkot and Ferozepur districts of the state. The Punjab Governor, Shri S.S. Ray, has laid the foundation stone at a 15-acre site acquired for the purpose. The academic session is expected to start from the 1988-89.

New Courses at HP University

The Himachal Pradesh Agricultural University is reported to have decided to introduce a postgraduate course in Home Science from the current academic session. This was announced by the Vice-Chancellor of the University, Dr. G.C. Negi, in Shimla recently.

He further said that three more disciplines, viz., clothing and textile, child development and extension and home management were also being introduced.

10 Crore Aid for Pondy University

The University Grants Commission (UGC) is reported to have sanctioned a grant of Rs. 10 cror to Pondicherry University fo implementing various innovativ projects, starting new department and improving its infrastructure This was stated by the Vice-Chancellor of the University, Dr. K Venkatasubramaniam, in Coimbatore recently.

Degree Course in Agril Engg

The Haryana Agricultural University has introduced a new 4-year degree course in Agricultural Engineering from the current academic session.

With the adoption of 10+2 pattern of education by Haryana, the University has converted the 5-year B.Sc. degree course to 4-year degree course.

Children's University

The Indian Council for Child Education, New Delhi, proposes to set up a Children's University. The first of its kind in the country, the proposed university would provide education to the children upto 14 years of age. According to Mr. B.D. Jatti, Chairman of the project, a 200-acre site has been selected on the Haryana-Delhi border and the modalities for setting up of the university are being worked out.

We Congratulate . . .

(1) Sri Kamaleswar Bora who has been appointed as Vice-Chancellor of the Dibrugarh University, Dibrugarh.

(2) Prof. U.R. Ananthamoorthy who has been appointed as Vice-Chancellor of the Gandhiji University, Kottayam.

(3) Dr. S.N. Das who has taken over as Vice-Chancellor of the Patna University, Patna.

(4) Dr. G.K. Narayana Reddy who has been appointed as Vice-Chancellor of the Karnatak University, Dharwad.

News from Agril. Varsities

National Workshop on Biogas Technology

Commander Narindra Singh, Adviser to the Government of ndia, Department of Non-Conventional Energy Sources in the Union Ministry for Energy, said that the biogas resources should be considered in their right perspective rrespective of the type of biogas plant being constructed. He was naugurating a two-day National Workshop on Biogas Technology at the Punjab Agricultural University (PAU). He further said that there must be a sound economic return of the investment being made by the Government in the biogas development programme.

He advised that plants should not be under-utilized as it would be a sheer wastage of money invested on them. He said that the institutional biogas plants should be encouraged in the urban areas which had good resources and less complexity of problems. All types of wastes including animal and human waste should be used in the biogas plants, he added.

Dr, Sukhdev Singh, Vice-Chancellor of the PAU, said that biogas plants could play a significant role in the uplift of rural areas and the quality of life. He said more community and institutional biogas plants should be constructed keeping in view the environmental improvement.

Dr. S.R. Verma, Dean of the College of Agricultural Engineerng, said that biogas was an mportant source of renewable orm of energy and had a lot of potential. He said that while installing the biogas plant, the social, economical and technical aspects must be kept in view.

Trapping Crop Insects

A know-how has been developed by the Department of Farm Machinery of the Tamil Nadu Agricultural University (TNAU), Coimbatore, to trap the crop insects by using the traditional power sprayers. The project was carried out in collaboration with the Department of Entomology. The device employs suction, created by the power sprayer blower, to 'catch and kill' the insects.

Field tests conducted in paddy, sorghum, cotton and sunflower fields proved effective for trapping insects like hoppers, midges, earhead bugs, white flies and ash weevils during severe outbreak. Since majority of the insects trapped was found to be alive, there is scope for using this gadget as a large scale sampling device. This simple attachment can be easily fixed to any power sprayer. The cost of the attachment is Rs. 170.

Engine Operated Paddy Transplanter

Mr Manohar Singh Gill, Financial Commissioner (Development), Punjab, while speaking at a function organised by the Punjab Agricultural University (PAU) to demonstrate the working of an engine-operated paddy transplanter, said that mechanisation of transplanting of paddy was very necessary as timely transplantation could give higher yield of the crop. He emphasised that the farmers should put more area under cotton, sugarcane and oilseeds without affecting the production of cereal crops like wheat and paddy. By promoting the cultivation of oilseeds, the country could save Rs 1000 crores which were being spent annually to import edible oils, he added.

Dr. Sukhdev Singh, Vice-Chancellor of the PAU, who presided, said that adequate plant population played a significant role for higher yield of paddy. He hoped that mechanised transplanting of paddy would save time, labour and money.

Dr, Khem Singh Gill, Director of Extension Education of the PAU, said that the reason behind the low paddy yield was less number of paddy plants per square metre. He stressed that 33 seedlings in a square metre should be planted. He hoped that by adopting the mechanised transplanting of paddy and following the latest farm technology generated by the University, the per acre average yield could be increased further.

News from Abroad

National Health Research Centre

The Australian Government has decided to set up a new National Centre for Epidemiology and Population Health at the Australian National University (ANU) in Canberra at an estimated cost of $9.25 million. An agreement to this effect has been signed by the Minister for Health, Mr. Neel Blewett and the Vice-Chancellor of ANU, Prof. Peter Karmel. The Centre will investigate the reasons why Australians suffer diseases like cancer, heart diseases and sexually transmitted viruses.

The Centre will inform and advise the Government on how to deal with community health problems facing Australians—including the care of a growing aged population and the prevention and treatment of heart disease, cancer, sexually transmitted diseases and injuries suffered in the workplace.

Scientists from various disciplines including demography, economics, medicine, sociology and biology will work at the new centre. They will carry out population studies focussing on fertility and infertility, mortality rates, and the social and economic impact of changes in population densities throughout Australia.

The Research School of Social Science at the ANU will link with its John Curtin School of Medical Research, the Social Psychiatry Research Unit and other ANU faculties in conducting research for the centre. The director of the ANU's John Curtin School of Medical Research, Professor Bob Porter, said : "The significant and important research being done, for instance, in demography, statistics, economics and sociology, will provide the new centre with a solid foundation of quality work which is unique in Australia". He further said he could envisage laboratory-based scientists at the new centre advising medical authorities on clinical trials and screening for disease.

The centre will enrol graduate students and offer intensive courses as well as conducting research. It will employ about 15 academic staff. The position of director will be advertised internationally and is expected to be filled by early 1988.

Advanced Studies in Publishing

The Department of Design at Oxford Polytechnic announces a special one-year course of study leading to a Diploma in Advanced Studies in Publishing. Because of the flexibility of the programme, each student is able to develop a self-selected course, whether to acquire or extend particular vocational experience or to explore personal interests. The course is mostly taught individually or in small groups and is particularly suited for those seeking careers in publishing. For more information contact : Mr. Bob Woodings, Field Chairman, Publishing, Design Department, Oxford Polytechnic, Oxford OX3 OBP, England.

Sports News

Varsity Hockets for National Camps

The Indian Hockey Federation has selected four junior hockey players from universities as probables for attending the National Coaching Camp being held at Delhi from 15th July. They are : Jagdish Chander (Lucknow), Pradeep Sharma & Mohd. Yashin (Meerut) and Shakil Khan (Bhopal). The Federation has also selected Jagdev Singh and Daljit Singh of Guru Nanak Dev University as probables to join the coaching camp in preparation of the Indian team for the next olympics. The coaching camp is in progress at the NS NIS, Patiala since Ist July, 1987.

News from UGC

Short-Term Research Visits to FRG

The University Grants Commission has asked the universities to nominate teachers in universities and its affiliated colleges for short-term research visits (not exceeding 3 months) to Federal Republic of Germany (F.R.G.) during 1988

Priority will be given to those scholars who have already established contacts with the German scholars/institutions in different fields including Indology and Philosophy. The selected teachers would be provided to and fro travel expenses by the University Grants Commission subject to the acceptance of their visits by the German authorities. The German authorities would pay a suitable maintenance allowance and provide other facilities to the scholars in terms of the Cultural Exchange Programme.

Interested teachers may contact their own universities. The universities have been asked to forward the nominations to the University Grants Commission latest by 31st July, 1987.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
September 18-21, 1987	National Seminar on Energy Education	To discuss various aspects of energy education—meaning and scope, resources, institutionalisation, teacher preparation, curriculum development, and role of mass media.	Department of Education, Rohilkhand University	Dr. Beena Shah, Organising Secretary, NASEEZ, Department of Education, Rohilkhand University, Bareilly-243 001, U.P.
Sept. 21 - Oct. 4, 1987	Training Course in Research Methodology in Geography	To expose the participants to research methods in Geography and quantitative and cartographic techniques employed in Geographical research.	Department of Earth Sciences, Manipur University, Imphal.	Dr. R.P. Singh, Dpartment of Earth Sciences, Manipur University, Imphal.
Novemher 14-16 1987	First Biennial Conference of the Allahabad Mathematical Society	It is proposed to cover Extension Problems in Topology, Number Theory, Cosmology and Statistics	Allahabad Mathematical Society, Allahabad-211 001	Professor P. Srivastava, Secretary, Allahabad Mathematical Society, 10, C.S.P. Singh Marg, Allahabad-211 001
November 16-20, 1987	Seventh National Symposium on Radiation Physics	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
November 19-21, 1987	Eighth Maharashtra Political Science Conference.	Main topics proposed to be discussed are: (1) National Integration; (2) Politics of Education; (3) Politics of World Peace; (4) Politics of Terrorism.	Nutan Mahavidyalaya, Sailu.	Sh. D.R. Kulkarni, Principal, Nutan Mahavidyalaya, Sailu - 431503 Dist. Parbhani. (Maharashtra).
November 25-27, 1987	**International Conference on Mud Architecture**	**To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.**	**Ministry of Urban Development, Govt. of India, in collaboraton with the Govt. of Kerala, HUDCO and the All India Housing Development Association.**	**Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & & Urban Development Corporation, K.G. Road, Bangalore - 560 009.**
November 26-28, 1987	**International Seminar on Instrumental Methods of Electro-Analytical Techniques.**	**To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electroanalysis.**	**Indian Institute of Science, Bangalore.**	**Prof. M.H. Dhananjaya, Principal and Chairman of the Organising Committee, S.J. College of Engg., Mysore.**
December 7-11, 1987	**Seventh Triennial International Conference on Thin Films. (ICTF-7)**	**To take stock of recent progress in the field of science, technology and applications of their films.**	**Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.**	**Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.**

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The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is open from 9-00 a.m. to 5-30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Library Science

1. Sharma, A.K. *Hindi mein sandharbha sahitya ka udabhava evam vikas : Alochanatmak adhyayan.* Jiwaji. Dr. S.M. Tripathi.

2. Sharma, Anil. *Information and reference sources in physical education : A critical and comparative evaluation with special reference to users' needs.* Jiwaji. Dr. S.M. Tripathi

3. Sharma. Hemant. *Special libraries in M.P. : A critical evaluation in the light of users' needs.* Jiwaji. Dr. S.M. Tripathi.

4. Singh, R.B. *Madhya Pradesh Vishwavidyalaya granthalaya mein vyoharik prasuchikaran upyogita tatha vikas kee sambhavana.* Jiwaji. Dr. S.M. Tripathi.

5. Tomar, Surendra Singh. *Public library movement in Madhya Pradesh : A critical study.* HS Gour. Dr. H. B. Sengar.

Sociology

1. Corona, Sr. *Evolving a programme for attitudinal changes in women.* Teresa. Dr. Mary Josephine Louis.

2. Mala, Jahan. *Continuing education for women of Kodaikanal.* Teresa. Dr. Thara Bhai.

3. Muthuchidambaram, S. *A study of professional women, Tamil Nadu.* Teresa. Dr. Thara Bhai.

4. Rubarani. *Abortion among women : A socio psychological approach.* Teresa. Jayalakshmi.

Political Science

1. Chaturvedi, Pradeep Kumar. *Samkaleen Bhartiya rajniti ke sandarbh mein Gandhijee ke satyagrah ke vichar evam vyavhar ka adhyayan.* Devi Ahilya. Prof. B.R. Sadh.

2. Deyannawar, S.K. *Integrated rural programme for weaker sections in drought area : A case study of Bijapur District.* Shivaji. Dr. K.K. Kavlekar.

3. Mishra Ashok Kumar. *Bhartiya rajnitik pranali kee pramukh pravrittiyan.* HS Gour. Dr. R.P.Gautam.

4. Mkem, Nzenwa Barthelanew. *Administrative relations in federal systems : Comparative study of centre-state relations in India and Nigeria.* Kerala. Dr. G. Gopakumar.

5. Samale, R. *Problems and prospects of national integration in India : Tamil Nadu : A case study.* Kerala. Dr. D. Jayadevadas.

6. Shaji, K. *Regionalism in North-Eastern India : A comparative study of Assam and Nagaland.* Kerala. Dr. D. Jayadevadas.

Economics

1. Chaturvedi, Anjuna. *Krishi utpadon ka vipnan : Sagar sambhag ke sandarbh mein.* HS Gour. Dr. M.L. Tripathi.

2. Devdutt, Ramani. *Socio economic status of self employed slum women : A case study of impact of bank-financing on self employment in North Madras.* Teresa. Dr. K. Shanthi.

3. Gangadevi S. *Polytechnic education and employment of women in Tamilnadu.* Teresa. Dr. Yashoda Shanmuga Sundaram.

4. Kalarani. *A study of women labour in match industry in Kamaraj Dt.* Teresa. Dr. Rosy Thanikkal.

5. Parvathi Devi. *Women workers in the unorganised sector.* Teresa. Dr. Yashoda Shanmuga Sundaram.

Law

1. Dube, Nisha. *Euthanasia : An inter disciplinary study.* Devi Ahilya. Dr. G.C. Kasliwal.

Education

1. Anusooya, V. *A critical analysis of branch XII Tamil literature curriculum with special reference to women.* Teresa. Dr. Mary Josephine Louis.

2. Gaikwad, Arun Baburao. *A critical study of impact of teaching population education on pupil teachers in colleges of education affiliated to Shivaji University, Kolhapur.* Shivaji. Dr. R.B. Dewasthalee.

3. Girija, S. *A cognigance of the aims and purposes of English teaching as perceived by women teachers in higher secondary schools in Madras.* Teresa. Dr. T. Vasanthakumari.

4. Innocentia, A.J.M. *An enquiry into the relationship between education and employment of women and the size of the family.* Teresa. Dr. Pankajam.

5. Jaya Mallika, B. *A comparative study of the relationship of self concept, anxiety and intelligence to school achievement of adolescent boys and girls in higher secondary scools.* Teresa. Dr. Ethel Salina Balachandran.

6. Manjulavalli, B. *Preparing teachers for a programme of population education for girls.* Teresa. Dr. Mary Josephine Louis.

7. Mary Rosario Fatima. *Evolving a programme of value oriented education for primary school girls.* Teresa. Dr. Pankajam.

8. Mohanambal, K.V. *A study of level of aspiration of women students belonging to different socio economic status.* Teresa. Dr. Savithri Krishnan.

9. Padmavathy, K.V. *A study of the factors influencing the value sense found among girl students of standard X.* Teresa. Dr. S. Sekhar.

10. Sathe, Narayan. *Comparison of reception strategy, selection strategy and induction method in attaining concepts of general science by IX class students.* Devi Ahilya, Dr. D.N. Sansanwal.

11. Vasuki, K. *Constraints that limit the educational achievement of school going girls.* Teresa. Dr. Pankajam.

Home Science

1. Punithavathiar, S. *Evaluation of awareness of women students on child rearing practices.* Teresa. Dr. Pankajam.

2. Ramasubbamma. *A study of the impact of maternal employment on the physical and mental development of pre-school age children.* Teresa. Dr. S.P. Rahgir.

3. Satagopan, Kumudha. *Impact of governmental welfare programmes on the quality of rural women.* Teresa. Dr. Godhawari Kamalanathan.

HUMANITIES

Language and Literature

English

1. Danalackme. *Pearl S. Buck and Kamala Markandeya : A comparative study.* Teresa. Dr. Mercy Louis J. Royan.

2. Felicina, S. *The ethos of Indian women in Indo-Anglian short-stories of women writers of the post-independence era.* Teresa. Dr. C.V.R. Vatsala.

3. Madhavan, Sudha. *Womanhood in Sri Aurobindo's literary works with special reference to Savitri.* Teresa. Dr. K.M. Shantha.

4. Manickavalli, Caroline. *Women in mass communication.* Teresa. Dr. Rosy D'Souza.

5. Moliyal, Kulal. *Women's problems as represented in Indian American literature.* Teresa. Dr. (Ms.) Primula Newsam.

6. Muthulakshmi, T.S. *Feminism in Indian writing.* Teresa. Dr. Mercy Louis J. Royan.

7. Narasimhan, Maya. *Dorris Lessing-women in quest of herself.* Teresa Dr. Seetha Srinivasan.

8. Nazneen. *A study in the ethics of womenhood with special reference to the novels of Angela Carter.* Teresa. Dr. C. Vatsala.

9. Padmasani Kannan, S. *Socio-economic status of Indian women in Kamala Markendeya's novels.* Teresa. Dr. Rosy D'Souza.

10. Saraswathi, T.C. *The image of women as reflected in Indian and American writings.* Teresa. Dr. K.M. Shantha.

11. Singh, Celestina Jeya. *Women English teachers and their problems of teaching English in under graduate classes.* Teresa. Dr. Rosy D'Souza.

12. Stephan, Margaret. *Treatment of women by Nayantara Sahgal.* Teresa. Dr. V. Saraswathi.

13. Talwar, Sree Rashmi. *Women novelists and the changing social values.* Teresa. Dr. C.T. Indra.

Sanskrit

1. Sathikumari, C. *Kavyalankara sarasangraha of udbhata: A study.* Kerala. Dr. N. Gopalapanicker.

2. Sobhanakumari, S. *Concept of bhakti in the Narada bhaktisutras.* Kerala. Dr. Jacob Kattackal.

Hindi

1. Tewari, Purshottam Lal, *Adhunik Ramkavya parampara ke sandarbh mein Ramchandra Bhargava krit Ramcharitra ka anusheelan.* HS Gour. Dr. V.P. Tiwari.

Marathi

1. Bhosale, T. R. *Mardhekrottar Marathi kaviteteel pratibha srishti visheshta Arti Prabhu ani Dilip Chitre yanchya anushangane.* Shivaji. Dr. T.B. Tapare.

Tamil

1. Arachi, V. Hermana Gilt. *Position and status of fisher-women in Kanyakumari.* Teresa. Dr. Ruth Joy.

2. Guruswami, Indrani. *The status of widows in Tamil Nadu through the areas.* Teresa. Dr. Thayammal Aravanan.

3. Indra, R. *Concept and problems of women as depicted in the Tamil magazines run by women and for women in pre-independence and post-independence period.* Teresa. Dr. V.P. Devadatta.

4. Kamala Vijayarani, D. *Dowry system as depicted in modern novels and poetry : A sociological perspective, 1970-1980.* Teresa. Dr. Cornelius.

5. Muthulakshmi, S. *Position and status of fisher women in Tuticorin.* Teresa. Dr. P. Soundra.

6. Saraswathi, K. *Position and status of Adivasi women at Ooty, Irular and Kurumbar.* Teresa. Dr. V.P. Devadatta.

7. Sarojini, K. Janaki Padmini. *Indian women : From 20th century marching into 21st century.* Teresa. Dr. Rajammal P. Devadass.

8. Sundara Bai, P. *Status of tribal women in Mount Mahendra, Kanyakumari.* Teresa. Dr. Ruth Joy.

9. Ulganayaki, S. *Cultural conflict and the status of women in Tamil Nadu.* Teresa. Dr. Sarada Rajagopalan.

Geography

1. Taliketi, N.B. *Spatial organization of periodic market centres in Solapur District : A Geographical appraisal.* Shivaji. Dr. A.D. Mulik.

History

1. Albaris, G. *History of fishermen in Travancore.* Kerala Dr. D. Sabhanan.

2. Anandalakshmi, V. *The role of women in political, socio-religious economic and cultural spheres in Andhradesa*

in the 19th and 20th centuries. Teresa. Dr. A Suryakumari.

3. Dachayani, Tara Bai. *Women administrators in Tamil Nadu.* Teresa. Dr. A. Suryakumari.

4. Goyal, Trishla, *Position of women in the post independent Tamilnadu.* Teresa. Dr. Balambal.

5. Kumari Vanaja, H.B. *Swadeshabhimani Ramakrishna Pillai and political awakening in Travancore.* Kerala. Dr. V. Sankaran.

6. Lalitha, K. *Participation of women in economic, social and cultural development of Tamil Nadu, 1857-1964.* Teresa. Dr. A. Suryakumari

7. Manoranjitham, P.V. *Historical perspective of the women of Piramalai Kallar Community of Madurai District.* Teresa. Dr. A Suryakumari.

8. Mohandan, P.M. *Agrarian movements in Travancore, 1000-1947.* Teresa. Dr. B. Sabhanan.

9. Pitchai Savariammal, M. *The position of women in the Paliya community in Sivagiri.* Teresa. Dr. A. Suryakumari.

10. Sundaram, Hema. *Women's movements in Tamilnadu.* Teresa. Dr. Vasanthi Devi.

11. Thiyagarajan, Jamuna. *History of distance education and development of women in Tamil Nadu with special reference to the Institute of Correspondence education, University of Madras.* Teresa. Dr. A. Suryakumari.

12. Thomas, Vimala. *Socio-economic consequences of land reforms in Kerala since 1957.* Kerala. Dr. B. Sabhanan.

13. Uma, N. *Contribution of women in Tamilnadu to fine arts.* Teresa. Dr. A. Suryakumari.

14. Vijayalakshmi, M.N. *E.V.R. reforms related to women* Teresa. Dr. A. Suryakumari.

15. Vijayalakshmi Amma, K.G. *Political status of women. in Kerala.* Teresa. Dr. A. Suryakumari.

16. Visweswaran, Kamala. *Role of Tamil women in India's movement for independence.* Teresa. Dr. A. Suryakumari.

THESES OF THE MONTH

A List of Doctoral Theses accepted by Indian Universities

SOCIAL SCIENCES

Journalism

1. Bhaumik, Nibedita. *Prak swadhinata jugar abibhakta Banglar maffaswaler samajik patra patrikar dhara, 1818-1947.* Calcutta.

Psychology

1. Manmohan Singh, B.K. *Occupational heredity (Inheritance) : A study of attitudes and values of medical practitioners with similar and dissimilar parental professional background.* Osmania

2. Sud, Sonali. *Worry emotionality and task-generated interference in test anxiety : An empirical test of attentional theory in Indian settings.* H.P.

Sociology

1. Chouksey, Pramod Kumar. *Prostitution in Madhya Pradesh.* HS Gour.

2. Jain, Jinendra Kumar. *Samajik vyavastha ka nyayik prakriya per prabhav ka tulnatmak adhyayan.* Bundelkhand.

3. Kulshreshta, Manjulata. *A socio-psychological study of attitudes towards religion and untouchability amongst college students.* Bundelkhand.

4. Nikhilesh Kumar. *A sociological study of medical profession.* NEHU.

5. Shukla, Ganesh Datt. *Socio perspectives in cares attending psycheatric service of a teaching general.* Bundelkhand.

6. Vishwakarma, Ram Swarup. *Swatrantrayottar Bundelkhand Sambhag mein prarambhik shiksha ka vikas aur uski samasyaon ka samajshastriya adhyayan, 1950-1980.* Bundelkhand.

Political Science

1. Bora, Neeta. *Anusoochit jatiyon ke rajnitik vikas mein arakshan kee bhoomika : Nainital Janpad ka ek adhyayan. Kumaun.*

2. Mishra, Sarojbala. *India's relations with Sikkim after independence.* Bundelkhand.

3. Pandey, D.C. *Municipal administration and politics in Kumaun. D. Litt.* Kumaun.

4. Tripathi, Janardan Prasad. *Shri Jai Prakash Narayan ka Bharatiya rajniti mein yogdan, 1971 ke uprant.* Bundelkhand.

5. Vijaychandra Naidu, G. *Asean and the major powers.* JNU.

Economics

1. Chahande, Kamal. *Savner Tehsil Matheel gramin strimajoor tyanchya samajik va arthik samasyanchya.* Nagpur.

2. Gupta, Manoranjan. *Migration, unemployment and development.* Calcutta.

3. Kandpal, H.D. *Kumaun ke arthik vikas mein sehkari andolanon kee bhoomika : Niyojan ke prarambh mein.* Kumaun.

4. Mohi, Mohammad Ali Abdullah, *Indo-Iraq economic relations, 1960-80.* Durgawati.

5. Mustafa, A. *Floods in Tamil Nadu.* Madurai.

6. Shah, Mihir. *Capitalist development and the transformation of agrarian relations in Chingleput District, C. 1780-1983.* JNU.

7. Singh, Sanjay Kumar. *Performance of development banks in India since independence.* Bihar.

Education

1. Darshana Kumari. *Intellectual commitment and educational interest in relation to certain cognitive and non-cognitive variables.* Jammu.

2. Gautam, Pushpa. *Development of programmed instruction in linear and branching styles and studying the performance in relation to creative thinking and level of aspiration.* HP.

3. Narayana, S. *A study of the general English courses at the undergraduate level in Osmania University.* Osmania.

4. Sant, D.K. *Shodh vigyan kosh : Sadhan aani sandharbh granth. D. Litt.* Shivaji.

5. Sayed Nurjehan Abubakar. *The relationship between cognitive personality and biographic variables and preference for teacher behaviour of secondary school students.* Karnataka.

Commerce

1. Ali, Mohammed Mehmood. *Capacity utilization in Engineering Industry in Kolhapur City.* Shivaji.

2 Awasthi, B.D. *Accounting for price level changes : A case study of Indian Corporate Sector and development of a normative model.* Kumaun.

3. Diwakar, Ravindra Kumar. *Madhya Pradesh ke krishi vikas mein sehkari andolan ka vishleshanatmak adhyayan : Samasyayen evam sambhavanayen.* HS Gour.

4. Kapoor, D. *Industrial leadership : A case study of Rampur Raza Textiles Pvt. Ltd.* Kumaun.

5. Khazel Asmail Abrahaeam. *India-Iraq trade and economic relations.* Delhi.

6. Mango Ram. *Marketing of rosin and turpentine in Jammu & Kashmir.* Jammu.

7. Prabhakara Raya, Rampalli. *Paddy, rice marketing system in Andhra Pradesh.* Andhra.

8. Suresh Chand. *Cost and profitability of commercial banks in India.* Delhi.

CLASSIFIED ADVERTISEMENTS

ADMISSIONS

MANIPUR UNIVERSITY

CANCHIPUR : IMPHAL

ADMISSION NOTICE

Dated, the 22nd June, 1987

No. MU/3-1/81 : Applications are invited for admission to M.A./M.Sc./M. Com. (Previous) Courses in this University for the session 1987-88 in (1) Anthropology, (2) Chemistry, (3) Earth Sciences, (4) Life Sciences, (5) Mathematics, (6) Physics, (7) Commerce, (8) Economics, (9) Education, (10) History, (11) Political Science, (12) English Language & Literature, (13) Hindi, (14) Linguistics, (15) Manipuri Language & Literature and (16) Philosophy.

Candidates who passed the Three-Year Degree Course or equivalent examination under the 10+2+3 system of this University or any other University may apply for admission to M.A./M.Sc./M. Com. (Previous) courses. Detailed information about the qualifications for admission and other conditions are laid down in the BROCHURE FOR ADMISSION TO POST-GRADUATE COURSES of the University to be supplied along with the application form for admission.

Applications (in duplicate) in the prescribed form available in the Sales Counter of this University on payment of Rs. 5/- (Rupees five) in cash or by sending a postal order/Bank Draft of Rs. 5/- (Rupees five) payable to the Registrar, Manipur University, Imphal-795003 along with a self-addressed 90 paise stamped envelope of 28 cm x 13 cm will be received by the concerned **Head of Department of the University** upto the **7th August 1987**. In the case of Education, the applications will be received by the Dean of School of Social Sciences and in the case of Philosophy the applications will be received by the Dean of School of Humanities upto the **7th August, 1987**.

The dates for admission test and the names of candidates to be invited for the test will be notified on the Departmental Notice Boards of the University.

Th. Joychandra Singh
REGISTRAR

UNIVERSITY OF MADRAS

NOTIFICATION

Applications are invited for admission to Certificate/Diploma Course conducted in the University Departments for the year 1987-88.

Application forms can be had from the Registrar, University of Madras on payment of Rs. 20/- by means of Demand Draft drawn in favour of the Registrar, University of Madras, Madras-5.

Eligibility for admission to the following Certifiate Courses

1. Certificate Course in Arabic, Persian and Urdu.
2. Certificate Course in Jainology.
3. Certificate Course in French.
4. Certificate Course in Telugu.
5. Certificate Course in Vaishnavism.

A graduate from this University or from any other University recognised as such thereto.

6. Certificate Course in Linguistics

Admission to the above course shall be open only to those who teach at the College or University level or those who have obtained research degrees such as M.Phil., and Ph.D., or those who are working M.Phil. or Ph.D.

Eligibility for admission to the following Diploma Courses

1. Diploma Course in Arabic, Persian and Urdu.
2. Diploma Course in Folklore.
3. Diploma Course in Comparative Literature.
4. Diploma Course in Interlingual Indian Literature
5. Diploma Course in French.
6. Diploma Course in Telugu.
7. Diploma Course in Linguistics.

Admission to the above course is open only to those who have passed the Certificate Course.

8. Diploma Course in Polymer Science.

A graduate from this University or from any other University recognised as such thereto, with Chemistry as the ,Main Subject with five years experienc subject to the condition with permanen employment in an Industry.

Self Addressed 1.40 paise stamped envelope should be accompanied with the requisition for the candidates requesting application forms through post.

Last date for the issue and receipt of applications is **30th July 1987**.

The University reserves the right not to conduct any of the above Courses if the circumstances so Warrant.

APPOINTMENTS

INDIAN INSTITUTE OF TECHNOLOGY

KHARAGPUR

Advertisement No. R/1/87

Applications are invited for the undermentioned posts in the Indian Institute of Technology, Kharagpur West Bengal :

A. Computer Centre

The Indian Institute of Technology has procured a mainframe Cyber system with the latest state-of-the-art technology. A distributed computing environment interconnecting all the departments and centres has been planned around this central system. The managers and professionals recruited in following posts will have the overall responsibility of running such a computing environment while developing application packages of national interest. Institute is looking for persons who are keen to work in an academic environment while deriving complete professional satisfaction.

I. System Manager : 1 post.

Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500/- plus D.A. etc. as admissible. (The scale of pay is likely to be revised).

Age : Preferably between 30 and 45 years.

Qualifications & Experience

B.E./M.Sc. in any branch with 10 years or M.Tech. in any branch with 8 years experience in writing programmes relating to operating systems/systems software, out of which at least 3 years must be in the managerial capacity in a large size computer installation.

Job Specification

Overall responsibility of the management of the Centre.

II. Operation Manager : 1 post.

Scale of Pay : Rs. 1200-50-1300-60-1900 us D.A. etc. as admissible. (The scale pay is likely to be revised).

Age : Preferably between 28 and 40 ars.

ualifications & Experience

B.E./M.Sc. with specialisation and years experience or M.Tech. with comter specialisation and 3 years experince. The experience must be in one of e following areas : Development software project, guiding software project am, management of a computer installtion.

ob Specification

(1) Day to day management of the Computer Centre.

(2) Providing adequate computing service to user community.

I. **System Analyst** : 2 posts (one post reserved for Scheduled Caste candidate and one post reserved for Scheduled Tribe candidate).

Scale of Pay : Rs. 1200-50-1300-60-900/- plus D.A. etc. as admissible. (The cale of pay is likely to be revised).

Age : Preferably between 28 and 40 ears.

Qualifications & Experience

B.E./M.Sc. with computer specialisaion and 5 years experience of M.Tech. with computer specialisation and 3 years experience. The experience must be in programming relating to system software, application software and software projects.

Job Specification

(a) Maintenance & updating of systems sorftware.

(b) Helping users in debugging, developing programme packages and usage of available packages.

(c) Development of application packages, and

(d) Organising training course and preparation of user's manual.

IV. **Programmer** : 2 posts (One post is reserved for Scheduled Tribe candidate).

Scale of Pay : Rs. 700-40-1100-50-1600/- plus D.A. etc. as admissible. (The scale of pay is likely to be revised).

Age : Preferably between 25 and 35 years.

Qualifications & Experience

B.E./M.Sc. with Computer specialisation and 2 years experience or M.Tech with computer specialisation and one year experience. The experience must be in programming relating to system software, application software and software projects.

Job Specification

Same as mentioned for System Analyst post.

B. **Medical Officer** (B.C. Roy Technology Hospital)

Scale of Pay : Rs. 700-40-1100-50-1600/- plus D.A. etc. and non-practising allowance as admissible. (The scale of pay is likely to be revised)

Age : 35 years and below.

Qualifications & Experience

Essential

(1) A recognised medical qualification included in the First or Second Schedule or Part-II of the Third Schedule (other than Licentiate qualifications) to the Indian Medical Council Act, 1956. Holders of educational qualifications included in Part-II of the Third Schedule should also fulfil the conditions stipulated in Sub-Section 3 of Section 13 of the Indian Medical Council Act, 1956.

(2) 5 years' experience in General Surgery / Orthopaedic Surgery after registration as a medical graduate. Experienc relaxable at the discretion of the appointing authority.

Desirable : M.S. (General Surgery) or M.S. (Orthopaedic).

Nature of Duties : In addition to his specialized work, he will be required to perform the duty Medical Officer

The qualifications reg. experience are relaxable at the discretion of the competent authority in the case of candidates belonging to the Scheduled Castes or Scheduled Tribes, if at any stage of selection, the competent authority is of the opinion that sufficient number of candidates from these communities possessing the requisite experience is not likely to be available to fill up the vacancies reserved for them.

The qualifications and experience prescribed above are the minimum and mere possession of the same does not entitle any candidate to be called for interview. Where the number of applications receieved in response to the advertisement is large, it will not be convenient nor possible for the Institute to interview all those candidates; in that case the Institute may restrict the number of candidates for interview etc. to a reasonable limit on the basis of qualifications and experience higher than the minimum prescribed in the advertisement.

Application forms may be had from the Registrar on request along with an unstamped self-addressed envelope of size 23 cm x 10 cm. Application accompanied with an application fee (non-refundable) of Rs. 7.50 (candidates belonging to Scheduled Castes/Scheduled Tribes are exempted from paying application fee) payable by means of Crossed Indian Postal Order in favour of Indian Institute of Technology, Kharagpur by the **14th August, 1987.**

Applicants who are on the employment of Government/Semi-Government Organisation/Educational Institute or of any Government undertaking must send their applications through proper channel.

S.R. Acharyya
REGISTRAR

MANIPUR UNIVERSITY

CANCHIPUR, IMPHAL-795 003

CORRIGENDUM

Dated, the 8th July, 1987

No. Mu/4-16/81/FCY : please read the specialization for the post of ASSISTANT PROFESSOR IN ECONOMICS appearing at Sl. No. 21 of this office Advertisement No. 4/87 (No. MU/4-16/81/FCY) dt. 30.6.87 as "Open" in place of "Agricultural Economics".

Th. Joychandra Singh
REGISTRAR

BANARAS HINDU UNIVERSITY

CORRIGENDUM

to Advertisement No. 11/1986-87
Item No. 21

The number of vacancies for the post of Project Officer, Centre of Adult & Continuing Education may be read as **TWO** instead of one.

CORRIGENDUM

to Advertisement No. 2/1987-88

(i) The scale of pay of the post of Radiological Physicist, Dept. of Radiotherapy & Radiation Medicine at Item No. 29 may be read as Rs. 700-1600 instead of Rs. 700-1300.

(ii) The number of vacancies for the post of Reader in Political Science at item No. 82 may be read as TWO instead of one.

(iii) The number of vacancies for the post of Reader in Psychology at item No. 85 may be read as TWO instead of one.

(iv) The number of vacancies for the post of Lecturer in Zoology at item No. 102 may be read as TWO instead of one.

(v) Those who have applied timely for the post of Professor of Sahitya/Darshan at item No. 87 in response to our earlier Advertisement No. 9/1984-85 need not apply again.

GUJARAT AGRICULTURAL UNIVERSITY
SARDAR KRUSHINAGAR 385 506
DIST : BANASKANTHA

Advertisement No. 5/87, Dated : 30.6.87

Applications on prescribed form are invited for the following posts for the faculty of Home Science in Gujarat Agricultural University. The candidates who fulfil the qualifications and desire to apply may send their application forms alongwith six copies of authenticated bio-data through proper channel to the Assistant Registrar (Adm), Gujarat Agricultural University, Sardar Krushinagar-385 506, Dist. Banaskantha.

	Name of the Post and Pay Scale	*Discipline*	*No. of Posts vacant*
1.	**Principal** Rs. 1500-60-1800-100-2000-125/2-2500 plus other allowances as per University rules with rent free accommodation.		1
2.	**Professor** Rs. 1500-60-1800-100-2000-125/2-2500 plus other allowances as per University rules.	Home Science	1
3.	**Associate Professor** Rs. 1200-50-1300-60-1600-assessment-60-1900 plus other allowances as per University rules.	Nutrition	1
4.	**Assistant Professor** Rs. 700-40-1100-50-1300-assessment-50-1600 plus other allowances as per University rules.	Nutrition	1
		Home Science Extn. Education	1
		Food Microbiology	1
		Human Anatomy/ Physiology	1
		Home Science	1
		Clothing & Textile	1
		Home Management	1
		Home Science Child Development	1
		Food catering	1
		Horticulture/ Vety. Sc. & Animal Husbandary	1

Application forms alongwith details regarding qualifications, experience and other terms and conditions for above posts can be had from the Assistant Registrar (Adm), Gujarat Agricultural University, Sardar Krushinagar-385506, Dist. Banaskantha on cash payment of Rs. 2/- (Money Order will not be accepted) or by sending crossed Indian Postal Order of equal amount issued in favour of "Comptroller, Gujarat Agricultural University, Sardar Krushinagar", along with the self addressed envelope (23 × 11 cms.) affixed with Rs. 2.20 paise postage stamps.

The applications duly completed in all respects should reach to the Assistant Registrar (Adm) at above address on or before **25.8.87** invariably through proper channel alongwith IPO of Rs. 50/- in favour of Comptroller, Gujarat Agricultural University, Sardar Krushinagar Dist. Banaskantha, Gujarat.

The candidates already in the service of this University may also apply through their respective officers in the prescribed form with six copies of authenticated bio-data without I.P.O. All candidates called for the interview will have to attend the same at their own cost. Kindly note the following instructions :

1. Incomplete applications will not be considered.
2. The University reserves its full right to fill up or not to fill up any or all the posts and to give or not to give appointment to the candidates selected by the Selection Committee.
3. Canvassing in any forms will completely disqualify a candidate.
4. Selected candidates for above posts or category is transferable at any campus or centre of the University and between Education, Research and Extension Activities/Project and will have to resign from previous employment.
5. The candidates who fulfil above qualifications and experience and who have applied in response to the advertisement No. 4/85 dated 5-7-1985 will have to apply again without necessary fees.

Asstt. Registrar (Adm.)

BANARAS HINDU UNIVERSITY

CORRIGENDUM OF ADVERTISEMENTS

The Pay Scales of the posts of Professors/Readers/Lecturers and Principals of Colleges advertised previously vide Advt. No. 2/1985-86, 3/1985-86, 5/1985-86, 7/1985-86, 8/1985-86, 10/1985-86, 1/1986-87, 6/1986-87, 7/1986-87, 10/1986-87, 11/1986-87 and 2/1987-88 etc. have since been revised as follows :

Name of the Post	Pre-revised Pay Scale in which the Post was advertised	Revised Pay Scales
1. **Professor**	**Rs.** 1500-60-1800-100-2000-125/2-2500.	Rs. 4500-150-5700-200-7300.
2. **Reader**	**Rs.** 1200-50-1300-60-1900	Rs. 3700-125-4700-160-5300.
3. **Lecturer**	**Rs.** 700-40-1100-50-1600	Rs. 2200-75-2800-100-4000.
4. **Principals of Colleges**	**Rs.** 1500-60-1800-100-2000-125/2-2500.	Rs. 4500-150-5700-200-7300.

Accordingly appointments to the Posts of Professors/Readers/Lecturers/Principals of Colleges as advertised previously will now be made in the revised pay scales.

ENGINEERING COLLEGE KOTA

(Autonomous Institution of Govt. of Rajasthan)

Advertisement No. ECK/Estt/4/87

Applications on the prescribed form are invited for the following posts :

1. **Professors** : in the U.G.C. scale of pay of Rs. 1500-60-1800-100-2000-125/2-2500. (i) Civil Engineering-2 posts, (ii) Electrical Engineering/Electronics-1 post, (iii) Computer Engineering-1 post, (iv) Mechanical Engineering-1 post, (v) Mathematics-1 post.

Qualifications : An eminent scholar with published work of high quality, actively engaged in research. Ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding Engineer/Technologist with established reputation who has made significant contribution to knowledge.

2. **Readers** : in the U.G.C. scale of pay of Rs. 1200-50-1300-60-1900. (i) Civil Engineering-5 posts. (ii) Electrical Engineering/Electronics-2 posts (iii) Mechanical Engineering-3 posts; and (iv) Mathematics-1 post.

Qualifications (for Technical) : Good academic record with a Doctor's degree in the relevant field about 5 years experience of teaching and/or research and development. Provided further that candidates not possessing Ph.D. may be considered if they have to their credit equivalent published research work or design/development work of a high order either in the institution or in an industry.

OR

In the case of persons to be recruited from industry on professional fields, candidates should possess good academic record with recognised professional work of about 7 years which should include innovation and/or research and development.

Qualification (For Non Technical) : Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods, or (iii) production of technical materials. About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. The condition may be relaxed in the case of candidates with outstanding research work.

3. **Lecturers** : in the U.G.C. scale of pay of Rs. 700-40-1100-50-1600. (i) Civil Engineering-3 posts, (ii) Geology-1 post, (iii) Electrical Engineering-2 posts, (iv) Mechanical Engineering-3 posts, (v) Computer Engineering-1 post, (vi) Physics-1 post, (vii) Humanities-1 post.

Qualifications (for Technical) : Master's degree in appropriate field in Engineering/Technology ; consistently good academic record with a bachelor's degree in Engineering/Technology; First class at Bachelor's degree and/or Master's degree level. One year's relevant professional experience outside academic/research institutions.

Provided further that if a candidate does not possess professional experience or a person possessing such experience is not found suitable, the person appointed will be required to obtain desired professional experience within a period of five years of his appointment, failing which he will not be able to earn further increments, until he fulfils this requirement. Having regard to the requirements of emerging fields of Engineering of developing inter-disciplinary programmes, the requirements of Engineering/Technology degree may be waived in the cases of otherwise well qualified candidates.

Qualifications (for Non-Technical) :

(a) A Doctor's degree or research work of an equally high standard.

(b) Consistently good academic record Ist or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degree in (a) and (b) above may be in relevant subjects.

Provided that if the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research workof quality) may be appointed provided he has done research work for at least two years or has practical experience in a research/laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment failing which he will not be able to earn further increment until he fulfils these requirements.

General : The benefits of CPF, Gratuity, D.A. H.R.A., Medical reimbursement are admissible as per rules of the college. Candidates aged 55 years or above but below 60 could be considered for appointment, if found suitable either on contract basis or on temporary basis. Higher starting pay is admissible in deserving cases. Number of posts to be filled may be changed at the discretion of the college. The college reserves the right not to fill any of the post advertised. Candidates interested to come on deputation may also apply. Candidates already in service may apply through proper channel.

Suitable candidates belonging to SC/ST would be considered and preferred for the post of Lecturers. Candidates belonging to SC/ST should submit a certificate regarding their caste.

Form : The application form can be obtained from Engineering College, Kota on remission of Rs. 2/- by cash or I.P.O.

Fees : The application must be accompanied by an application fee of Rs. 15/- in the form of crossed Indian Postal Order payable to the Engineering College, Kota at Kota Post Office Application not accompanied by postal order of the value of application fee will not be considered.

Last Date : Last date for receipt of application is **31-8-1987.** Applications received after the due date will not be considered.

R.K. Jain
REGISTRAR

PUNJABI UNIVERSITY PATIALA

Advt. No. 22/Rect./PRO/Rect.

Applications are invited for the following posts :

1. **Professors** : (Two in the Department of Economics, One each in the Department of Sociology & Social Anthropology and Regional Centre, Bhatinda in the Subject of Economic.)

Grade : Rs. 1500-60-1800-100-2000-125
2-2500 (UGC)

Specializations

Economics : Any one or more of the following :

Regional Economics, Political Economy of Development, Public Finance, International Economics.

Sociology & Social Anthropology

Desirable : Evidence of work in Punjabi and Research work on Punjabi Society.

Economics for Regional Centre, Bhatinda: Open

2. **Readers** : (Three in the Department of Geography, Two each in the Department of Economics and Guru Gobind Singh Department of Religious Studies. One each in the Departments of Sociology & Social Anthropology. Anthropological Linguistics, Education & Community Services, Foreign Languages (for French).

Grade : Rs. 1200-50-1300-60-1900
(UGC)

Specialiazations

Geography : For One post : Political Geography
Two posts . .: Open

Sociology & Social Anth.

Desirable : Evidence of work in Punjabi and Research work on Punjabi Society.

Anth. Linguistics : General Linguistics OR Stylistics OR Socio-Linguistics OR Phonology OR Punjabi Grammer OR Semiotics OR Transformational Generative Grammer.

Economics : Any one or more of the following :

Industrial Economics, Monetary Economics, Transport Economics, Economic Thought.

G.G.S. Deptt. of Religious Studies

For First Post : Religious Studies/Comparative Religion. Proficiency in one or more major religious traditions of the world.

For Second Post : Christian Studies. Proficiency in Christian Theology and a religious tradition other than Christianity.

3. **Lecturers** : (One each in the Departments of Persian, Urdu & Arabic (for Arabic), Anth. Linguistics, Foreign Languages (for Russian), Education & Community Services, Physics and Economics.)

Grade : Rs. 700-40-1100-50-1600 (UGC)

Specializations

Arabic : Candidate should be M.A. (Arabic) First Class/High Second Class (B+) with M.Phil/M.Lit/Ph.D. Degree OR should have published work of high standard. He must have atleast three years teaching experience to Arabic Classes. Preference will be given to the candidates having qualifications in Persian.

Anth. Linguistics : General Linguistics or Stylistics or Sociolinguistics or Phonology or Punjabi Grammer or Semiotics or Transformational Generative Grammer.

Physics : Experimental Physics.

Economics : Any one or more of the following :

Microeconomic Theory, Macroeconomic Theory, Economic History, Monetary Economics.

4. **Assistant Registrar**—One

Grade : Rs. 940-30-1000-40-1200/50-1400/60-1700-75-1850+100 Spl. Pay.

Note :

(i) For teaching & research posts, candidates should possess working knowledge of Punjabi Parveshika/Matric standard.
(ii) Details of QUALIFICATIONS etc. will be supplied alongwith application forms.
(iii) Number of posts may be increased or decreased.
(iv) The qualifications may be relaxed in case of poor response.
(v) The University reserves the right not to fill up of the posts advertised.

APPLICATION FORMS can be had from the Head, Publication Bureau, Punjabi University, Patiala on payment of Rs. 5/-, at the Counter OR by sending IPO's of Rs. 5/- in favour of the Registrar, alongwith self addressed envelope of the size 25 x 10 cms. with 3.40 paise postage superscribing on it REQUEST FOR APPLICATION FORM FOR THE POST OF————————.

In service candidates should apply through proper channel with an advance copy to the University.

Application form, complete in all respects, should reach the Registrar by 31-7-1987.

REGISTRAR

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157

D57

University News

MONDAY, JULY 27, 1987

Rs. 1.50

C.F.T.R.I. MYSORE

Combined Universities Hockey Team which won the second place in the Junior National Hockey Championship held at Lucknow recently

Council of Scientific & Industrial Research

Advertisement No. 3/87

CSIR is seeking to appoint a Chief Engineer for its Engineering Services Division located at New Delhi. The Engineering Services Division has a staff of around 100 comprising Engineers and Architects and annual budget of Rs. 10 crore. The Division is responsible for the building construction activities in the CSIR and its laboratories. Its main functions are : (i) site inspection and preparation of architectural designs, (ii) structural designing, (iii) estimation and tendering, (iv) site supervision.

The Chief Engineer is the Head of the Division and would be responsible for developing and managing annual budget, day-to-day operations of the Division and man management.

The candidate should be an established Civil Engineer or an Architect preferably below 50 years of age. He should have a demonstrated ability to manage/supervise construction works at various sites; a proven record of inter-personnel skills.

This is a contractual appointment for a period of six years in the scale of Rs. 4500-150-5700 plus allowances as admissible under the Central Government rules.

A duly constituted Screening Committee will decide on the number of candidates to be invited to meet the Selection Committee. The decision of the Council in this behalf will be final. Applications from employees working in Govt. Deptts., Public Sector Organisations and Govt. funded agencies will be considered only if forwarded through proper channel and with a clear certificate that the applicant, if selected, will be relieved within three months of receipt of the appointment orders. Canvassing in any form and/or bringing in any influence, political or otherwise, will be treated as disqualification for the post.

Application forms for the post mentioned above are obtainable (free of cost) from the Joint Secretary (Administration), Council of Scientific & Industrial Research, Rafi Marg, New Delhi 110 001 upto **3.9.1987**. The duly completed form together with application fee of Rs. 8/- (Rupees eight only) in the form of crossed Indian Postal Order in favour of Council of Scientific & Industrial Research, New Delhi should reach him latest by **24.9.1987**. No fee is payable by Scheduled Caste/Tribe candidates.

UNIVERSITY NEWS

VOL. XXV JULY 27
No. 30 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor:
SUTINDER SINGH

Personnel Management of Examinations

N.L. Mishra*

LIBRARY & DOCUM
UNIT
11 AUG 19
C.F.T.R.I.

All types of management desirable for smooth functioning of any organisation may be grouped into two broad categories, viz., the man-management and material-management. Which of these two is more important? Answer to this, perhaps, depends upon the nature of business or function of the organisation. In a university system where most of the jobs, particularly those related to examinations are time bound programmes and thousands and lacs of students are examined every year, naturally, the man-management plays a vital role and as such is more important. Thus while planning for personnel management the following considerations may be kept in mind :

1. Image of university administration is directly linked with the timely commencement of examinations and declaration of results.
2. Examination is always a time bound programme and all its activities are interlinked and inter-dependent.
3. Right from registration/enrolment to declaration of results and delivery of degree there are so many jobs which are undertaken to complete the process of examination. It is worth-noting that all the activities, minor or major, are equally important.
4. Regularity of academic session is directly related to the examinations.
5. Any delay in the commencement of examinations and consequently declaration of results may have adverse effects on the future plans of the students.
6. Many external agencies are involved in the examination management.
7. The Registrar or Controller of Examinations has to devote a lot of time in public dealings and meetings, so often held in the university system. Thus a competent supervisory cadre is must in each branch of examination.
8. For completing the job within stipulated time comparatively more manpower is needed to be put on the job.
9. For efficient and smooth functioning, each job has to be organised in a separate branch, section or cell.
10. For each job, work studies should be conducted and average output worked out in terms of manpower and quantum of work ratio.

In the light of these facts, it is desirable to have a look at various jobs taken up in the process of examinations. This will give an idea of the variety and volume of work. All the jobs of examinations may be put in two broad groups.

(a) Jobs of secrecy branch.
(b) Jobs of conduct (of examination) branch.

Jobs of Secrecy Branch

1. Preparation of panels of examiners, subject-wise.

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2. Conducting meeting of selection of examiners committee and get the paper setters, additional head-examiners and co-examiners appointed.
3. To procure acceptance from examiners.
4. Despatching of material for paper setting.
5. Manufacturing of answer-books.
6. Arranging practical examinations.
7. Preparation of lists of examiners (for theory papers) class, subject and paper-wise.
8. Allotment of answer-books examiner-wise.
9. Printing of question papers.
10. Printing/typing of marking instructions for each paper where the number of examiners is more than one.
11. To constitute and detail flying squads to to check use of unfair means at the examination centre.
12. Collecting answer-books from the examination centres.
13. Despatch of answer-books to examiners.
14. Preparation of programme/plan for assessment if it is to be organised centrally.
15. Receipt of award sheets.
16. Tabulation of marks by computer or tabulators.
17. Preparation of result sheets.
18. Declaration of results.
19. Clearance of 'RL' (result later) cases.
20. To make similar arrangements for supplementary examinations in all respects.
21. Disposal of cases of scrutiny.
22. Arrangements for revaluation in all respects.
23. Disposal of cases of unfair means.

Jobs of Conduct Branch

1. Finalisation of examination centres.
2. Appointment of centre superintendents.
3. Printing of stationery required in connection with examinations.
4. Preparation of examination plan (date-wise).
5. Finalisation of dates for submission of examination application forms.
6. Checking of examination application forms.
7. Enrolment/Registration of the candidates.
8. Getting incomplete application forms completed through query/letters (to be sent to the candidates concerned).
9. Preparation and despatch of permission letters to the non-collegiate aad ex-students.
10. Preparation and despatch of admission cards.
11. Preparation of basic roll lists examination-wise (manual or computerised).
12. Preparation of numerical returns, examination, subject and centre-wise (Manual or computerised).
13. Preparation and despatch of centre material.
14. Preparation of lists of Ex-students who are not supposed to appear in practical examination.
15. Preparation and issue of advance marks-sheets.
16. Clearance of 'RW' (result with-held for the fault of candidate) cases.
17. Preparation of revised marks-sheets (after revaluation).
18. Preparation of duplicate marks-sheets (on demand).
19. Checking of application forms for supplementary examination.
20. Preparation of merit lists.
21. Preparation and issue of migration certificates (on demand).
22. Preparation and issue of povisional certificates (on demand).
23. Preparation and distribution of degrees/certificates.
24. Preparation and distribution of gold medals.
25. Recognition of institutions for research centres.
26. Enrolment of candidates for research (Ph.D./D.Sc.), appointment of examiners and arrangements for viva-voce.
27. Conducting meeting of Research Board.
28. Attending queries (verbal or written) regarding various aspects of examinations.

Organisational Structure

Experience shows that section oriented organisational structure suits the examination management most. In this pattern all the activities are organised through various sections; normally one job/business is assigned to one section. Seating arrangement for whole of the section is made in one room. The Section Officer also sits in the same. Relevant record of the section also is kept in the almirahs of the room. Number of LDCs UDCs and Assistants may depend upon the work load of the section. Thus in section oriented organisational pattern, section is the main, rather key unit where job is actually done. Guidance of Section Officer is readily available to the staff working in the section.

Above the section, supervisory officers such as ssistant Registrars and Dy. Registrars may be there o supervise and control the functioning of sections. hus the cadre of Assistant Registrar and Dy. egistrar is a sort of link between the actually orking units i.e. section and the decision making evel i.e. Controller of Examinations of Registrar.

For various jobs taken up in the secrecy and conuct branches, as mentioned in the aforesaid lists, the under-mentioned sections may be organised.

Proposed Sections for Secrecy Branch

1.	Secrecy—I	Arts Faculty—UG, PG both
2.	Secrecy—II	Commerce & Science faculties UG, PG both
3.	Secrecy—III	All professional exams.
4.	Secrecy—IV	Revaluation and Scrutiny
5.	Secrecy—V	Unfair means cases
6.	Secrecy—VI	Printing of question papers
7.	Secrecy—VII	Secrecy-Miscellaneous such as answer-books, etc.

Proposed Sections for Conduct Branch

1.	Conduct-I	PG classes in the Faculties of Arts, Commerce and Science
2.	Conduct-II	UG classes in Arts Faculty
3.	Conduct-III	UG classes in the Faculties of Commerce and Science
4.	Conduct-IV	All professional examinations
5.	Conduct-V	Enrolment and Migration
6.	Conduct-VI	Degrees and Certificates
7.	Conduct-VII	Research
8.	Conduct-VIII	Students' Service Centre
9.	Conduct-IX	Miscellaneous such as stationary, etc.
10.	Conduct-X	Accounts & cash related to examinations

Organisational plan for sections of secrecy and conduct branches, suggested above, is just tentative; actual organisation will depend upon the variety and quantum of work which may vary from one university to the other. If the number of students is much less in a faculty, the same may be clubbed with other section and thus the number of sections can be reduced.

Norms for Staffing Pattern

The number of persons to be posted in a section cannot be decided unless there are set norms for staffing pattern. Norms are framed after carrying on work studies in which average/optimum output per man hour is calculated and thus a set number of staff is suggested for a given work load. In examination management number of examinees is the only scientific basis which can be adopted for the purpose of norms. Norms for staffing pattern may differ from university to university. However, a generalised scale can be taken for the purpose of proper understanding and initiation of work. On the basis of experience some practical norms for staffing in the sections dealing with various jobs of conduct and secrecy branches are suggested.

1. (a) Batch of one UDC and one LDC for every lot of 6000 candidates of U.G. Exam. (Conduct)
   (b) Batch of one UDC and one LDC for every lot of 6000 candidates of P.G. exam. (Conduct)
2. One Assistant for 6 UDCs and LDCs or part thereof.
3. One Section Officer for every two Assistants.
4. One Assistant Registrar for every two Section Officers.
5. One Dy. Registrar for every two or three Assistent Registrars.
6. In secrecy section one LDC/UDC for every 5000 candidates.
7. For enrolment one LDC/UDC for every 5000 candidates.
8. For receipt and despatch one LDC/UDC for every 5000 candidates.
9, For accounts and cash one LDC/UDC for every 4000 candidates.
10. Class IV staff—one for every 10 members of ministerial staff plus one for each officer of the rank of Assistant Registrar and above. With the offices of Controller of Exams. and Registrar two class IV employees may be attached.

Note : The conduct branch deals with the record of each student while in secrecy it is the number of examiners which matters. Thus the workload in secrecy branch is less as compared to their counter sections of conduct branch.

Disposal of Files (Delegation of Powers)

University administration is quite peculiar in the sense that all the powers vest in the Executive Council or Syndicate, and the Vice-Chancellor is the only competent authority to take decision. Contrary to such a concentration of power, the files, problems, issues and applications to be disposed of particularly those related to examinations are generally so diverse that these can be disposed of expeditiously only when all officers, working at different levels, engage themselves for quick disposal. In such a situation delegation of power is essential. Delegation of powers is one of the recent trends in modern management technique. With this, even the officers working at lower level, develop a sense of responsibility. Confidence and trust reposed in a lower functionaries inspire them to become more responsible. Sense of co-operation, co-ordination and mutual understanding also develops among the officers working at different levels. This is more true in examination management where all activities are interlinked in a stratified manner. Unless first stage is completed the second cannot be taken up. Number of issues and applications to be disposed of is too large and generally in proportion to the number of students and affiliated colleges. Thus for smooth functioning and expeditious disposal of file it is desirable to have a system of delegation of power. A definite scheme for disposal of files at different levels may be chalked out for the purpose.

Norms for Disposal of Files

In most of the universities there are no set norms for the disposal of work in the administrative office. In absence of such norms there is no check on the movement of files/papers which get unnecessarily delayed and held up at different levels. For the smooth functioning of an office, it is essential to prescribe a time limit for a routine paper to travel up to the stage of its final disposal. This will help in eradicating delays and accumulation of papers at all levels of official hierarchy. Necessity of such a system becomes manifold in examination management where each job has to be completed in given time. Following norms are suggested for disposal of routine and ordinary papers :

S. No.	*Level of disposal*	*Maximum time prescribed for disposal*
1.	Cases which are to be disposed of at the level of the Vice-Chancellor.	15 days
2.	Cases which are to be disposed of at the level of Registrar.	12 days
3.	Cases which are to be disposed of at the level of Controller of Exams.	10 days
4.	Cases which are to be disposed of at the level of Addl. Registrar or Finance Officer.	8 days
5.	Cases which are to be disposed of at the level of Dy. Registrar.	6 days
6.	Cases which are to be disposed of at the level of Asstt. Registrars.	5 days
7.	Cases which are to be disposed of at the level of Section Officer.	4 days

The break up of the above norms may be follows in order of movement of file :

i)	Perusal of mail and its diarising in the Central Registry and disbursement to sectional dealing assistants.	1 day
ii)	Time prescribed to the dealing assistants for putting up the papers.	2 days
iii)	Time for Section Officer to dispose of a file	1 day
iv)	Time for Asstt. Registrar to dispose of a case.	2 days
v)	Time for Dy. Registrar/ Addl. Registrar to dispose of a case.	2 days
vi)	Time for Controller of Exams. to dispose of a case.	2 days
vii)	Time suggested for the level of Registrar.	2 days
viii)	Time suggested for the level of Vice-Chancellor.	2 days
ix)	Time for typing and actual issue of order, etc.	1 day

IN-SERVICE TRAINING

System of in-service training in universities is desirable because of the following reasons :

(i) In most of the universities there is no system of foundational courses. It is true in case of all the posts, right from L.D.C. to Dy. Registrar.

(ii) Lower posts in the university system, say upto the level of Section Officer, are filled in by promotion and not through open competition. This results in the persons who are initially recruited as L.D.C. generally take up the post of U.D.Cs, Assistants, Accountants and Section Officers in due course of time. It is true such persons learn by experience and process of learning goes on from generation to generation. However, there is an inherent weakness of this process. If somebody, by chance, develops an incorrect understanding he goes on with the same for years together and others who learn from him adopt the same incorrect method/understanding.

(iii) For the posts of officers—Assistant Registrar and above, in most of the universities, system of open competition is there. However, in practice people are taken from inside in most of the cases. Thus the officers too have the same understanding and approach as the lower functionaries. There is no system of fundamental training for officers also.

(iv) In university system officers and employees are transferred from one branch to another branch frequently. Today one Section Officer or Asstt. Registrar is working in examination branch, tomorrow he can be posted in establishment and next time shifted to Accounts or Academic branch. Thus he is supposed to have fundamental knowledge of all the branches. Ironically, he is not trained for any of these branches.

(v) The universities are autonomous bodies where the rules are amended and systems are changed frequently. After each meeting of Syndicate or Senate one may find something new. It is, therefore, not only desirable, but necessary that such amendments are incorporated from time to time and implemented properly. For proper implementation it is necessary that the officers and employees who are actually supposed to implement the decisions, have the proper knowledge.

(vi) It is true that the universities are autonomous bodies. However, as far as non-teaching staff is concerned, in most of the cases, service rules of concerned State Govt. are invariably followed in the same or in some modified form. Thus to have a clear understanding of the service conditions and rules, prevalent in the Govt., it is desirable to organise in-service training programme.

Planning for Training

While organising in-service training programmes it may be kept in mind that the programme is meant for the persons who are experienced people and working in the field for the last so many years. Thus it is advisable that the programme may be given a shape of in-service training-cum-workshop where trainees are provided sufficient time for discussions and for removing practical difficulties faced by them in their day to day work. Duration may be a week

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or so. Timings may be kept in such a manner that their routine work does not suffer much. Afternoons of the week may be allotted for the purpose. Faculty may be arranged from within the university or from outside also, if need be, but the persons who are selected for this job should be experts in their respective fields.

Most important aspect of the inservice training-cum-workshop programme is selection of the areas to be discussed. For this purpose the whole non-teaching staff of the university may be grouped into three categories.

(a) Officers—Assistant Registrars and above.
(b) Section Officers.
(c) Lower functionaries such as UDCs, Assistants, etc.

Thus while deciding areas for training-cum-workshop it has to be kept in view that the trainees are really benefited and their knowledge and efficiency increases. They should, after participating in the programme,feel themselves better equipped and knowledgeable to discharge their duties. Obviously, the nature of jobs performed at different levels will provide base for selection of subjects. For officers not only the knowledge of business (jobs) but also the behavioural aspect is important. They should have quality of leadership, power of decision making and art of administrative communication. A Section Officer has to look after his section and is required to have better co-ordination with his fellow workers. Then and then only, he may expect proper co-operation from them. At the same time he is supposed to have thorough knowledge of his job. For lower functionaries, actual practice of the job is required. This is the level where people are supposed to do the job by hand. Thus they should have practice of doing things. For this level not only the theoretical training but also the practical exercises are desirable. Such practice may be arranged with the same forms, statements, stationery, etc. which are actually used by them.

In short, for all the three categories of non-teaching staff, following areas may be taken up for the purpose of inservice training-cum-workshop.

Areas for Discussions at the level of Assistant Registrar and above

(i) General financial management and control.
(ii) Purchase and stores keeping.
(iii) Management of examination record.
(iv) Personnel management in examinations.
(v) Functioning of examination secrecy branch.
(vi) Functioning of examination conduct branch.
(vii) Disciplinary proceedings.
(viii) Leadership
(ix) Administrative communication.
(x) Motivation and behaviour.

Areas for Discussions at the level of Section Officer

(i) General financial management and central.
(ii) Office procedure.
(iii) Management of examination record.
(iv) Stores-verification and weeding out old and obsolete records.
(v) Functioning of examination secrecy branch..
(vi) Functioning of examination conduct branch
(vii) Disciplinary proceedings.
(viii) Personnel management in examination sections.
(ix) Administrative communication.
(x) Leadership
(xi) Co-ordination and co-operation.

Areas for Inservice Training of Lower Functionaries

(i) Office procedure and filing system.
(ii) General financial rules.
(iii) Management of examination record.
(iv) Functioning of secrecy branch—Theory & Practice.
(v) Functioning of conduct branch—Theory & Practice.
(vi) Stores—Maintenance and weeding out of old and obsolete records.
(vii) Service conditions.
(viii) Communication (with students and other visitors).
(ix) Student service.

Recruitment

Practices prevalent in most of the Indian universities with regard to recruitment of non-teaching staff are asunder :

(a) The lower posts upto the rank of Section Officer are filled in by promotion. Thus employee is initially recruited as L.D.C. or Steno-typist.

(b) The posts of officers such as Assistant Registrar, Dy. Registrar, Additional Registrar, Controller of Examinations and Registrar are filled in through open selection but without any written test.

If a survey is conducted, it will be revealed that most of the Assistant Registrars and Dy. Registrars working in the universities are promotees; they started their careers as L.D.C. or U.D.C. By the time they become officer they are almost spent forces. Neither they are open to new ideas nor have guts to face challenges, their jobs demand. Such persons also lack qualities of leadership, motivation and administrative communication. In fact, because of their past positions they are unable to develop confidence and find themselves in a position of helplessness whenever they are required to command a situation other than normal. Because of their long association with the staff at different levels and also to some extent on account of their inherent weaknesses they cannot enforce discipline. Thus the non-teaching middle order officer is the weakest link of the university organisation which needs immediate attention of the university administration. The system that there is open selection for every post in the officer cadre is also not desirable. It is surprising that one who has worked as Assistant Registrar for 10 years is required to face a fresh selection board to become Dy. Registrar. This does not seem to be a sound policy. A direct recruit as Assistant Registrar should get automatic promotion as Dy. Registrar after a definite reasonable time.

Keeping all this in view it is desirable that there may be University Non-teaching Service Selection Board. Such a board may be constituted by University Grants Commission at national level or if need be at regional levels. The Board may be constituted on the pattern of Public Service Commission. If it is not possible services of State Public Service Commission may be utilized for the purpose. Age limits and qualifications may be kept on the pattern of other services of similar stature. There should be a written test followed by interview. A panel of successful candidates may be prepared. Out of this panel, persons may be posted in various universities. Initially the officers selected by the Commission may be appointed as Assistant Registrars. For higher posts there should be system of automatic promotion. Such a system will definitely help in removing all the weaker aspects of the non-teaching officers of the universities.

For lower posts each university may have its own selection committees. Initially recruitment may be done for the lowest post i.e. L.D.C. or Steno-typist. Written test, type test and interview should be properly conducted for selecting a candidate. For further promotion on higher posts such as UDC, Assistant or Section Officer there may be two criterion:

(a) To qualify the efficiency test which may be in the form of a written test prescribing excercises on office work.

(b) Outstanding annual performance reports for the last five years.

This system may help in improving the standard of efficiency at the lower levels.

Annual Performance Appraisal

While finalising system of annual performance appraisal and the scheme of Reporting and Reveiwing officers of various categories of non-employees, some vital key points related to university system should also be kept in mind :

(a) That a university is a close circuit as far as transfers are concerned. Transfers are there but these do not imply the spirit of transfer. Thus the university employees work at the same place in the same office for decades, sometimes, even more. In such a long period personal equations of both type-positive and negative, may develop with the fellow staff.

(b) That a university is also, more or less, a close circuit as far as entry to outsiders (in non-teaching sections) is concerned. The number of such persons may be only 2%—3% and that too at officers level. At lower levels it is completely a close door system.

(c) That in various branches, particularly in examinations, there may be persons who may be occupying the same seats for the last 15-20 years. Thus their efficiency is bound to be far more as compared to those who have been or are transferred frequently.

(d) To make the system of Annual Performance Appraisal a success objectivity is essential. For achieving such objectivity it is desirable that no officer should remain on one seat for more than three years. For lower functionaries this duration may be five years.

(e) That most of the universities do not have any system of performance appraisal so far. Thus in the initial stage, say for 3-4 years, the system of Annual Performance Appraisal should be introduced in such a way that the affect of the aforesaid situations is minimised.

The format of the Annual Performance Appraisal (proforma) may be designed in such a way that it may have three parts to be filled in by three different persons as mentioned below. It should be a simple proforma.

Part I — By the employee concerned
Part II — By the reporting officer
Part III — By the Reviewing officer.

The reporting and reviewing officers in respect of various categories of employees may be asunder.

It may be noted that an officer higher than the immediate senior one, has been suggested as reporting officer. Needless to mention, it is because of special circumstances prevalent in the University offices as analysed in the previous paragraphs.

As regards the performance report for class IV employees, it may be reported by the concerned Section Officer or any other officer of equal or higher rank under whom the employee has actually worked for sufficient time. The step of reviewing is not necessary in the case of class IV employees.

The Annual Performance Appraisal should be initiated within 30 days from the closing date of year. If, however, an employee does not submit his performance appraisal in time, the reporting officer himself should initiate the APA and forward it to the reviewing officer. The ninimum period for the purpose of reporting on performance may be six months or so. ☐

S. No.	Category of Employee	Reporting Officer	Reviewing Officer	Accepting Officer
1.	LDC/UDC	Section Officer (S.O.)	Asstt. Registrar (A.R.)	Dy. Registrar (Estt.) (D.R.)
2.	Asstt/Acctts.	A.R. (in consultation with S.O.)	D.R.	-do-
3.	S.O.	D.R. (in consultation with A.R.)	Registrar	-do-
4.	A.R.	Registrar (in consultation with D.R.)	V.C.	Registrar
5.	D.R.	Registrar (in consultation with Addl. Regr./Controller of Exams (C.E.)/Finance Officer	V.C.	Registrar
6.	Addl. Regr./C.E.	Registrar/V.C.	V.C.	Registrar

Wanted : A New Strategy for Financing Higher Education—II

K.K. Balachander*

Contributions from other (Private) Sources

The second way of augmenting resources for development of higher education is to make increased efforts for attracting private contributions, donations, endowments, etc. This source has been drying up quite rapidly, and it needs to be stimulated and revived, especially through the strengthening of college/university-community relationship. In the earlier periods of university/college education, munificient private donors took active interest and initiative in the establishment of higher educational institutions, and financed them liberally. In fact, such financial support had enabled these institutions to retain their independence to a great extent. The following measures will go a long way in encouraging the flow of such private funds to the higher education sector :

(i) If donations have to be activised, the 'net gains' to the supplier of donations must be raised significantly and the 'price' of acceptance of donations must be reduced substantially (Panchamukhi). The former suggests attractive tax reliefs/concessions to individuals/organisations/industries for donations made to higher education; the latter suggests acceptance of donations which are, as far as possible, unconditional so that the university/college can retain its autonomy. In fact, private organisations/enterprises, and even households, should obtain 100 per cent tax relief for the contributions that they make towards investments in education, particularly in the spheres of higher professional/technical education.

(ii) There is need for a better industry-academic institution interaction or interplay. Some efforts have been made recently in this direction but these do not appear to be quite effective. Substantial institutional and attitudinal barriers still exist to enter into such a relationship, and these have to be surmounted. The potential benefits on both sides are immense and they can enhance each others' mission. The universities, for example, have ideas and need money; the industry has money and needs ideas. This will also help the academic institutions which have come under heavy financial pressures in recent times, in obtaining assistance for replacement of obsolete scientific instruments and equipment that are invariably found in the laboratories of many of them, and for building up of their libraries. The cost of such items is rising faster than government can fund now. Besides, this sort of an arrangement will encourage better university industry participation in designing higher educational programmes in the emerging new fields and professions, and exposure of students to them, thus enabling the latter to gain enormous confidence when employed in industries. It is the experience now that many candidates with technical/professional qualifications find it difficult to make a favourable impression at the time of their employment in the industry, because of lack of practical experience/training. This can be rectified by giving training to students in areas as required by the industries. Industry could also be involved in curriculum development for certain specialised fields so that a more meaningful syllabus could be framed. The expert staff working in industries could be associated with universities by inviting them for special lectures or as Visiting Professors, which some of the Management Institutes are doing now. Also as faculty salaries lag behind some other professional compensation, the possibility of receiving a share in consultancy income from industry becomes more important in recruiting and retaining teachers in many fields.

An ideal area of collaborative effort between university and industry is advanced research. According to Schultz, among the most important educational activities that render social benefits, university research is in substantial part one. The case for research, which is associated with higher education needs to be discussed perhaps in greater detail as it provides a strong argument for university-industry partnership. No country has a chance of entering the modern technological world without Research and Development organised on a large scale. The rate at which new ideas and new techniques of production can be embodied in physical capital determines the rate at which the economy as a whole can advance. This then, as Vaizey also put it, is one

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clear contribution which is made by higher education to economic development, because it is from universities (and research establishments) that new ideas and techniques flow. Because certain kinds of basic research is done in universities (such as bio-technology, environmental systems, energy etc.) the industry does not have to add to their own research budgets to get into these fields. Research and development activities have therefore many links with higher education; they are inextricably interwined as Marshall's 'knife-blade and handle'—perfectly complementary. It is now realised that much of the research is the outcome of team work, the great bulk of which is being carried on in universities. Research-oriented universities are among the major contributors to the advancement of knowledge in advanced countries. They not only play the role of providing a continuous flow of research results, but also supply the highly skilled personnel needed for R & D activities in other sectors. The universities can be a convenient mechanism for discovering and cultivating potential talent, and at the same time provide a congenial atmosphere for conducting research in those areas that will foster civil, cultural, technical and scientific progress. Their role has also been enhanced because of the complementarity between teaching and research. The private companies/corporations in advanced nations had extended, and continue to extend, liberal financial assistance to universities to conduct research in many disciplines, including Humanities and Social Sciences. In fact, the universities/faculty in Western countries prefer such funding today precisely because industry frequently offer its support with less control and far less red tape than they have experienced under Government grants.

Perhaps a consortium of business donors can get together to support higher educational programmes. If only one company supports such services, it may have to bear costs that are disproportionate to its benefits. The company may also feel that its contribution will make little difference to the overall future of the service in question. A collective effort will, therefore, be a good solution.

The Government should extend its cooperation in fostering university-industry collaboration by providing all incentives and removing such disincentives inhibiting this kind of interaction. Certain guidelines and mutual guarantees will of course have to be framed for such collaborative arrangement, e.g. protecting the freedom of the academic staff to choose the direction of research, the commitment of both the parties to academic values and the good of the public, etc. Also the teachers should not be treated as employees of the industry.

(iii) There are many other untapped small contributions that the local community can make to the higher educational enterprise, which the example of the successful efforts made in Tanzania highlight. With a proper machinery and good public relations, such resources, though small, can be mobilised.

(iv) Another untapped source of finance is the charitable institutions/trusts and religious institutions. Some of them are already engaged in educational activities, but such efforts need to be properly channelled and encouraged through appropriate fiscal measures and concessions.

(v) Institutions like the LIC, the IDBI, the IFCI, and other financial institutions may extend grants to certain specific academic programmes in universities or creation of chairs in specialised fields.

In short, a new approach to resource-mobilization by universities/colleges is urgently needed. The conventional assumption that only Government can alleviate the financial crisis faced by the higher educational sector has to be overcome as it is becoming increasingly obvious that this overdependence is neither feasible nor desirable. The institutions appear to be too willing to accept the funds that are provided by the Government, and not worrying about the consequences of this largesse. So long as they can be seen to derive most of their incomes from governmental sources, the inducement to private individuals/organisations to come forward with financial support is impaired. If the institutions cast away their apathy and reluctance and go in a big way to mobilise new and unconventional private resources (including the help of their alumni) further deterioration of their financial condition can be averted. It would also help them, particularly the universities, to redeem their autonomy, as they will be subjected to less and less Government attention in financial matters. Sincere efforts have to be made, both by the institutions and the Government, to educate public opinion on the urgent need for raising more private (non-governmental) resources for higher education. The institutions have so far been not successful in creating among the community an awareness of the constraints, pressures and challenges being faced by them. Sustained efforts should, therefore, be made to establish a closer rapport with the community instead of the institutions living in an environment of exclusiveness. The only assurance that they have to offer to the community is that they will exert their maximum to get most out of the resources by optimum use, introduce cost-saving measures and avoid all institutional extravaganza. Unless the community is convinced that the funds provided by it are being utilised in the best possible manner, and the college/university affairs are being conducted in an integrated meaningful, fair and efficient manner, it will not volunteer with help. In short, the institutions must show that they deserve public trust and support. For this, how the institutions function within is very important. As Madhuri Shah had rightly observed, "what we need in our higher educational institutions, especially universities, today is more of calm thinking, more of thinking together, more of purposeful thinking, more of breaking wits instead of breaking heads......"

Looking Ahead

Higher education in India has been passing through a critical period. Its ill-health has been causing grave concern to all. So far its planning has been concerned with expansion. The Government has now, though belatedly, recognized the implications of faster expansion, especially on the financial front. The UGC in one of its Policy Frame Documents, had described the situation thus : "The system of higher education is now in a state of crisis due to uncontrolled and unplanned expansion, inadequate inputs in terms of money, materials and talents, falling standards in a large proportion of institutions, weakening of student motivation, increase of educated unemployment etc." There is not just a single crisis; there are several crises, all closely related to one another. No single panacea can, therefore, bring about a change in the situation; several options need to be considered. As a first step, however, clear policy decisions on the following fundamental issues—which have not received adequate attention so far—are very essential :

(a) What should be the future policy with regard to expansion of higher education ? Should the enrolment-targets be broadly adjusted to national needs.

The demand for higher education is based more or individual desire, due to many reasons. In some countries, including developing ones, Governments have set ceilings on admissions to colleges/universities with quota reserved for depressed groups. National examinations have been instituted to regulate admissions. The New Education Policy on Education (1986) has stated that "as far as higher education is concerned, "in the near future, the main emphasis will be on the consolidation of, and expansion of facilities in the existing institutions". The principle of giving precedence to 'quality' over 'number' should help restore some health and vigour to the higher education system which looks perniciously anaemic at present. Qualitative improvement in higher education constitutes the essence of human resource enrichment; this issue naturally acquires an immediacy. Increasing efforts will have to be made to diversify the structure of education through non-university/vocational education wherein the success todate has been minimal. This is exacerbated by the differences in employment prospects and rewards which students of the two streams obtain in the country.

(b) With regard to financing of higher education, the questions that arise are how much higher education is going to cost say in the next 15 years, where the resources are going to come from, and if the Government resources are inadequate to meet future development, what are the alternative strategies of financing that can be adopted ? Should the present situation wherein the Government is gradually replacing the fast declining private (non-governmental) contributions and the whole system being turned into almost a totally Government-financed one—with its adverse consequences on the institutions, especially the state universities—be allowed to continue in the same manner ? And should the large gap between expenditure and fee contribution—which is found to be wider especially in the case of some Professional/Technical categories of higher education (wherein a substantial number of those who received training could acquire markedly higher earnings later either in the country or outside) be retained, or should there be a closer alignment between the expenditure on higher education and the fees paid by students ? In other words, should the fee structure which has remained static for a long time be reviewed so that students pay a reasonable proportion of the actual expenditure incurred on them—say 45-50 per cent of the direct expenditure which was the share of fee contribution in direct expenditure in 1947-48 ? Should the Government ask those students from outside India to pay a higher rate of fee as many other countries are doing ? This has become relevant now as an increasing number of students from other countries are taking advantage of our higher education system.

Some alternative strategies of financing higher education have been suggested by experts in the field, but these proposals have not received due attention. If a serious debate could be started in this direction soon and the public is made aware of the alternatives that are open the different aspects of the problem would become much more clearer than what they are now. The public gets educated not by presenting one alternative strategy, but a set of alternatives—say three or four—and then the choise be left to it. There however appears to be a general agreement, at least among economists, for rationalising the fee levels and fee structure (with adequate scholarships and fee remissions for needy (and deserving) students) particularly at the graduate (plus three), honours and post-graduate levels and professional/technical categories of higher education where the employment/self-employment opportunities are better and the private gains are relatively high.

(c) Should the subsidy be extended to all uniformly regardless of their capacity to pay, especially when we take into account the facts that (i) the country is characterised by highly unequal distribution of income, and (ii) it is the people with a favourable socio-economic background who have taken advantage to a large extent of the existing provisions of higher education (forming nearly two-thirds of the total enrolment)? Or should the programme of subsidy be implemented in such a manner that there is some positive discrimination in favour of the low-income group of students who have a natural aptitude for higher education so that poverty shall not be a bar to their educational advancement ?

(d) What should be the respective roles of the Union and State Governments in the development of higher education in the country as a whole and in the different States which are at different stages of higher educational (and economic) development ? What are the tpyes of aid needed from the Centre to equalize higher educational opportunities and thereby increase 'the pool of talent' available for national development ?

As education is now a Concurrent subject, the Union and State Governments will both have a say in the matter. This also brings in the question of proper coordination and demarcation of the responsibility between the major fund-giving agencies—the Planning Commission, the UGC and the State Governments—and between the last two and the higher educational institutions. In fact, a large number of the financial ills and non-achievements of the desired results could be traced to lack of proper coordination between the above fund-giving agencies. While the development of higher education has to proceed separately in each State in a manner best suited to local conditions, the Central Government has a direct responsibility and positive role because the Constitution has made "Coordination and Maintenance of standards in higher education" a Central subject. Special Central financial aid should be provided to equalize higher educational opportunities as between people in relatively rich and relatively poor regions. Such a system of differentiation is conducive to the development of the reserves of talent to be found in backward regions.

(e) Is there scope for further tapping of resources, other than the Public Exchequer and fee contributions, to finance higher education—say private benefactions, religious trusts, financial institutions, the industrial (and agricultural) sector, etc.? Should donations, gifts, etc. to educational institutions be exempt from income-tax subject to safeguards?

The Document **Challenge of Education** has suggested that besides raising more resources through increased fees, raising resources through community subscriptions and contributions from development departments and others using the manpower output of higher education needs serious consideration. It has also suggested that the users of technical manpower should be made to pay a cess on the profits to support technical education. Also the recommendations made by the Seminar on 'Financing of Education' held under the auspices of the Madras Institute of Development Studies (October 1985) in this regard merit serious consideration.

(f) If the available resources are likely to limit further development of higher education, is it not essential to get most of such resources by optimum use? What are the areas of higher educational activity from which adequate returns are not made at present? What measures should be adopted to plug the loopholes so that the system can be made more efficient and productive?

In fact some of the crucial reforms need very little monetary investment. A country not well endowed with funds has to ensure that resources are properly used and that the best possible returns are obtained. If ushering in the new technologies is the goal, then, development of human potential to meet the challenge becomes the aim of educational administrators. That is, the broad financial efforts need to be further divided into their finer components. The benefits in financial terms as measured by skill enhancement, contribution to development or any other factor, in each line, may be correspondingly worked out. We will then be able to obtain a benefit-cost matrix which will give us the interactions involved and also the rate of benefit in each line of higher educational investment. Especially since the resources are scarce (having a number of alternate uses), there is a continuing need to discover the benefits of different lines of action, and see that the resources flow into appropriate channels.

(g) What are the main shortcomings of the existing system of financial administration, both at Centre, State and institutional levels, and how can they be overcome? Whereas there may be many factors responsible for the present state of affairs, educational administration cannot escape its own share of the blame. It is an admitted fact that the administrative mechinery, both at Central and State levels, still suffers from many drawbacks. It continues to be static and refuses to change. It is extremely niggardly in their approach to the basic needs of higher educational institutions. In short, these institutions are forced to fit themselves into the strait-jacket tailored by the Government. The emphasis appears to be more on 'regulation than development'. Such an attitude has an adverse effect not only on the implementation of academic programmes but also on the quality of the programmes themselves. The chasm between policy formulation and implementation remains too wide. There is a total lack of appreciation of the real role of higher education and that, more than else, accounts for the casual treatment meted out to universities/colleges. In short, there is hardly any interaction between the University/College authorities and officials in the Education Ministries at State-level. There has to be a change in the present set-up.

All these questions assume special significance in the present context of rethinking by policy makers and educationists on the existing design of the educational system in the country. The need of the hour apparently appears to be the formulation of a comprehensive strategy for the development of higher education, separately, and the same may be introduced in a phased manner during the next five years. Perhaps a joint committee of representatives of the UGC, the State Education Departments and the universities and other institutions may study the problem of resources for higher education and work out a strategy for mobilising them. There is some kind of a chaotic situation existing in many States with regard to the financing of higher educational institutions, especially in the case of the state universities. Instead of looking upon the maintenance and development of the state universities as just the business of the States concerned, the Central Government should pay more attention to their financial needs. This, more than anything else, could help strengthening the health and vigour of university education all over the country. For this, the UGC should be associated more effectively in its capacity as an advisor to the State Governments on enrolment policy, determining the question of maintenance grants, and even on fixation of fee rates. The UGC Act has recently been amended, and the Commission has been given the power to regulate fee structure, coursewise, but it has yet to exercise it. If armed with more funds and staff, the Commission can succeed in this direction. As a first step, the Commission should undertake a review of the working of the state universities on the same lines as was done in the case of central universities a few months ago. Questions like whether these universities are making enough efforts to mobilise their own finances, whether the resources allocated are optimal, and within the institutions itself, whether the allocation among the different departments is optimal, whether the resources are being utilised efficiently and economically, whether there exist economies of scale to be realised, etc. will naturally arise while undertaking such a review. With such an approach, it will be possible to analyse various aspects of financing of state universities which form an important part of the university system in the country—covering nearly 96 per cent of the enrolment (in university departments and affiliated/constituent colleges)—and to develop some general principles of resource-mobilisation and resource-utilisation.

This is the appropriate time to clearly identify the instrumentalities of achieving the overall goals of higher education in the mixed economic set up, and decide in advance, explicitly, the proper weightage to be given to each one of them. In other words, questions like what should be the role of direct control of enrolment and development of higher education through variation in fees, or grants-in-aid, or in the fiscal incentives for donations to higher education etc. would assume great policy significance. A substantial portion of the income of a teacher should come from the fees that can be garnered from students. The wonderful effect of income upon attention and energy which Adam Smith remarked over two centuries ago, could ensure a new level of academic performance in universities/colleges. It will be a welcome relief to budgetary resources if the non-governmental sectors, including students/parents commit themselves to a bigger share of the expenditure. Fees could be conceived not merely as a source of finance, but also as an instrument of policy for allocation of enrolment into different lines in accordance with) the future manpower requirements (Panchamukhi, P.R. The pressure for **status quo** will no doubt be there, but it has to be overcome by educating public opinion and considerable political persuasion. It is the responsibility of no government to help all students become graduates almost free of cost. The Indian Constitution itself has prescribed compulsory free education only upto a certain level. To go far beyond this is not only uncalled for but is also, in the long run, against the interests of the students themselves.

All this would of course call for bold decisions and radical departures from earlier strategies, conventions and established procedures/rules relating to the growth and financing of higher education, but they will go a long way in putting higher education back on the rails and helping it reach its destination (goal). It is high time an attempt is made to strengthen the institutions that have already come into existence, to enable them to function in peace and help them to grow as excellent centres.

The financial crisis in the higher education sector is too deep and cannot be handled through a series of **ad hoc** actions. Before it is too late, some permanent measures be taken for growth and financing of higher education, within the prescribed economic and other limitations. This in turn will also require massive strengthening and sweeping reorientation of educational research. Unless some bold and new steps are taken, the higher education sector will drift into further chaos and ultimate collapse. The Prime Minister has made a firm commitment to the transformation of Indian educational system, and the Government has already formulated certain policy-guidelines towards this end. This is a unique opportunity for our educational planners and policy makers to recognize the major constraints and work with a new zeal and dedication for a more efficient and equitable system. It is an arduous task, but is feasible operationally. □

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S. Lokanathan
Director

Convocation

Higher Education for All

"There can be no gainsaying that there should be higher education for all, but the system has to be disabused of some of the existing maladies . . . . . ." said Honourable Sri Prem Chand Jain, Chief Justice of the High Court of Karnataka while delivering the Convocation Address at the Twenty Second Annual Convocation of the Bangalore University. Justice Jain decried, in particular, the fact that the present system prepares students for non-manual jobs only. Rarely does a person from the rural areas desire to go back and work in his rural settings. The other maladies to which Justice Jain referred to included absence of education in morals and etiquettes as also of courses in citizenship in our curricula. He felt since morals and etiquettes can be taught without any reference to religion, our being a secular democracy should not prove to be a hinderance. Similarly, the introduction of citizenship courses was necessary to introduce the students to the great strides made by our Constitution which has been hailed as an 'epochal document of democracy'. Excerpts:

Convocation ceremony of these days is reminiscent of the traditional ceremonies held in our ancient universities of Takshashila and Nalanda where it was customary to bid farewell to the students with the blessing: "SATHYAM VADA. DHARMAM CHARA. SWADHYAYANMA PRAMADAHA."

This incantation from TAITTRIYOPANISHAD sums up all that the teachers desire of their students—"Speak the truth, do righteous things, never give up your education."

My youngs friends, graduation is only the beginning of real education. The University merely opens the door wide to enable you to pursue knowledge throughout your life in the best possible way. Education is the key to everything. As E. F. Schumacher, the author of the famous "SMALL IS BEAUTIFUL" observes:

> "The essence of education is the transmission of values but values do not help us to pick our way through life, unless they have become our own, a part, so to say, of our mental make-up.
>
> When people ask for education, they normally mean something more than mere training, something more than mere knowledge or facts, and something more than a diversion. May be they cannot by themselves formulate precisely what they are looking for, but I think what they are really looking for is ideas that would make the world and their own lives intelligible to them".

Swami Vivekananda, as you all know, went like a lone voyager to America, unheralded, and with no assests other than his own faculties and the lessons he learnt at the feet of the master. He captured the imagination of the whole world, by his thoughtful utterances. Regarding education, he said:

> Education is not the amount of information that is put into your brain and runs riot there, undigested all your life. We must have life-building, man-making, character making, assimilation of ideas. If you have assimilated five ideas and made them your life and character, you have more education than any man who has got by heart a whole library".

Very, significantly, the Union Minisiry has come out with a far-reaching statement of educational policy, entitled, "NATIONAL POLICY ON EDUCATION 1986" with the object of intensifying the "nationwide effort in human resource development, with education playing its multi-faceted role". It has been emphasised that higher education provides people with an opportunity to reflect on the social, economic, cultural, moral and spiritual issues facing humanity and that it contributes to national development through dissemination of specialised knowledge and skills.

Talking of the "Essence and Role of Education" the new policy statement makes it clear that in our national perception, education is essentially for all. It refines sensitivities and perceptions and contributes to national cohesion, a scientific temper and independence of mind and spirit, thus furthering the different goals enshrined in our Constitution.

The new policy statement correctly depicts the aims and objectives of education and represents the new ethos. It heralds a radically new approach to education at all levels. I need not trouble you with the enumeration of details here. Suffice it to say that it has among other things, laid emphasis on vocationalisation of education, de-linking degrees from jobs in selected areas, providing enhanced support to research in universities and coordinating research efforts of different universities, and for the use of computers as part of professional education, the encouragement of "self-employment" as a career option, and to dis-abuse the T V and other media of the effects of display of violence and promotion of consumerism etc.

My young friends, irrespective of the discipline in which you graduated, please remember that your University education is the result of conscious contribution by your family, the society and the State. As one study has revealed, it requires the equivalent of the value of agricultural produce raised by 150 peasants for one year, to support the university education of a single student for one year. Your achievements and accomplishments in the University should therefore belong as much to the society and to the State as they belong to you. Dr. Rajendra Prasad, the first President of India, gave the purpose of education as "creation, rather than enjoyment or ostentation". Swami Vivekananda has said : "We want that education by which character is formed, strength of mind is increased, the intellect is expanded, and by which one can stand on one's own feet". I am mentioning these facts only to impress the need for recognition of the duties and obligations which the University knowledge has placed on you. In emphasising this role, I am not suggesting even for a moment that you should literally lead the life of an ascetic or a life of self-abnegation or self-denial. By all means earn well in an honest way and be as comfortable as you can, but always have the interests of the society and the State at heart, and work for the fulfilment of that purpose.

There can be no gainsaying that there should be higher education for all, but the system has to be disabused of some of the existing maladies of which particular mention may be made of the fact that the present system prepares students for non-manual jobs only. Rarely does a person from the rural areas desire to go back and work in his rural settings, once he takes a university degree and becomes accustomed to urban life. Swami Vivekananda says : "The education which does not help the common mass of people to equip themselves for the struggle for life, which does not bring out strength of character, a spirit of philanthropy, and the courage of a lion—is it worth the name ? Real education is that which enables one to stand on his own legs". In the words of Dr. Rajendra Prasad, the universities have become something of a blotting paper to soak away all talent from village parts. The position has become worse today. Concentration of industries in urban areas and the hope of availability of semi-skilled or unskilled jobs has led to a mass exodus from rural areas to urban areas and the effects of over-urbanisation are seen all round. In spite of this, it is noticed that educated people are reluctant to choose manual jobs even if they are available in cities. This neglect of manual labour and the lack of dignity of labour does not augur well. John Gardner very pertinently remarks :

> "An excellent plumber is infinitely more admirable than an incompetent philosopher. The society which scorns excellence in plumbing because plumbing is a humble activity and tolerates shoddiness in philosophy because it is an exalted activity, will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water."

In the same context, I would like to give some excerpts from the report of the International Commission on the Development of Education submitted to UNESCO in 1972 :

> "Educational action to prepare for work and active life should aim less at training young people to practice at a given trade or profession than at equipping them to adapt themselves to a variety of jobs, at developing their capacities continuously, in order to keep pace with developing production methods and working conditions. It should help achieve optimum mobility in employment and facilitate conversion from one profession or branch of a profession to another."

The position in India, however, is that holders of degrees in humanities and science are mostly after Government service, as they feel that it gives them job-security, in addition to handsome salaries. Equally sought-after are the posts in public corporations, particularly the posts with higher brackets of income and perquisites. Since the present system of education does not equip the students for diverse type of jobs and situations, but only white collar jobs, all students taking up non-technical courses seek white collar jobs only. I am sure that as proposed in the National Policy of 1986, if degrees are delinked from jobs (in selected areas, not requiring academic expertise), the present trend may be reversed and the indiscriminate rush to university courses may be halted.

Further, two things are sadly missing from the curricula in college studies. In most of the western countries, religious teaching forms part of the studies, which will also take care of educating the student in morals and etiquette. In India, probably for the reason that we are a secular democracy, morals and etiquette do not figure among the subjects taught. But since they can be taught without any reference to religion, I hope that this matter will receive due consideration.

Moreover, the absence of a citizenship course for students other than those studying political science or law, has virtually kept many students ignorant of the great strides made by our Constitution which has been hailed as an epochal document of democracy. Particularly, the Preamble, the Directive Principles of State Policy and the Fundamental Duties have been so vividly expressive of human desires and aspirations, that they deserve to be read and re-read from time to time. The object of incorporating Fundamental Duties has not been to obtain compliance on pain of penalty for violation, but to make each citizen his own monitor, while exercising or enforcing his rights.

You may be tempted to ask as to why there should be such enumeration, if they are not legally enforceable. I do not desire to give the jurist's answer namely that in interpreting the rights claimed or asserted, the extent to which the Fundamental Duties have been departed from or complied with may also be examined. Friends, you are quite aware that at all ages of man's long and varied history, humanity has been sustained and nourished by acts of charity, benevolence and service, often with a spirit of self-sacrifice, by people, motivated by compassion and humanitarian considerations for other fellow beings. Such acts, being self-imposed obligations, can be stopped at will. They can never be enforced under any form of compulsion. They are in the nature of socio-ethical convictions transmitted from generation to generation and are reflective of the level of culture of the times. Culture, as E. E. Euban in his "Concepts of Sociology" says, is an elaborate set of meanings and values, shared by members of a society. In my opinion, Fundamental Duties enshrined in Art. 51A of the Constitution should become a socio-ethical concept and a cultural entry of every Indian, and only then will our country awake into the kingdom of Heaven, as Gurudev has so vividly put it. It is for this reason that I suggest a course on citizenship training as inter-disciplinary study for all students.

Friends, I have made these suggestions not in the belief that they are the only solutions. Experts will have to give more attention to the various problems to prevent the aimless approach to degree courses and to imbue the students with a feeling of hope and confidence and to convince them that by a proper approach they can be useful to the society at large.

Further, it is my firm view that teaching in colleges must undergo a processual change in which great attention is paid to the moods, instincts and receptivity of students. The teachers must derive job satisfaction by designing the course in such a way as to enable even the novice to comprehend without difficulty.

I believe that a teacher's true role resembles the master-sculptor who by chiselling out the unwanted portions of the rock-piece, ultimately gives it the graceful shape which he desires it to be. A good sculptor can produce good pieces of sculpture, provided he gives full attention to the subject, by being constantly close to it, and watching the progress of sculpting. In education, the teacher becomes the sculptor, while the student becomes the object, but unlike the rock in the hands of the sculptor, the student is immensely mouldable. To make a good student, it requires reciprocal action and response from the teacher and the student, and I believe that education and teaching must be oriented in this manner.

Here, I deem it appropriate to express myself strongly against a malady which has been eating into the educational system, and also the finances and time of many anxious students and their parents. The desire to get higher education or technical degrees is virtually insatiable. When the regular institutions bar the entry to many students on account of lack of accommodation, many private institutions try to take their place. Even though they do not conform to the requirements of standands laid down by the University, and even though they are certain that the poor accommodation and the ill-fitting staff would not qualify the institution for grant of affiliation by the university, they do not hesitate to enrol students and commence the courses. They probably believe that by hook or crook they would be able to make up for all their deficiencies. But as it often happens, the university may not grant affiliation and the reasons for such refusal would be justifiable in many cases. But, the students who have completed the year (not necessarily the course) find that they are in the unenviable position of not getting admittance to the public examination held by the University, and they rush to court for getting stay orders. In my opinion, such a situation would not arise if the university acts promptly in the very beginning to close down the unauthorised institution and warn the public against seeking student admission. I need hardly point out that proliferation of Colleges without proper infrastructure, accommodation and equipment will lower the standards to abysmal depths, and recovery would be well nigh impossible.

My young friends, at this time when you are going out of the sheltered comfort of the University, into the world at large with fond hopes of building up a career, I feel that it is necessary for you to be forewarned about certain fissiparous tendencies which have crept into almost all walks of life. In particular, I may refer to the element of distrust, which has affected almost every calling, business or profession, and which has not spared even the temples, benevolent societies or institutions, or the recreational centres, not to speak of political circles where, as you know, it is most rampant. Distrust breeds unpleasantness, bickerings and a constant feeling of jealousy. Due to its disastrous consequences, not only the 'have nots' but also those who are highly placed and affluent are seen morose and dissatisfied with their lot. It has led to a high sense of frustration and grumbling at all levels.

Here I pose a question as to who is responsible for this chaotic state ? To my mind, we the individuals are ourselves to blame, and we have brought this state of affairs. One main reason appears to be that we have been placing greater values upon big ideals, high ideals, religious and political dogmas than to developing our own individuality and originality. We have thereby enmeshed ourselves in words and symbols, which might have been meaningful, when they were invented, but which have lost their relevance and become antiquated in the present day context. The resultant conflict between what we are and what we ought to be, is leading us to self-deception, and duplicity in our behaviour towards others ; it does not allow us to face the facts and the actualities.

Friends, life and living are facts, which nobody can deny and instead of understanding life and meeting its demands, we are constantly on the path to destruction and cursing life as dark, wretched

Bangalore University

Highlights

1. There are 30 university departments and 175 affiliated colleges covering the faculties of education, arts, science, law, medicine, engineering, commerce, management, etc. Student strength exceeds 85,000 of which 6,000 are post-graduate students.
2. The University offers post-graduate courses in non-traditional disciplines like, Rural Development, Non-Conventional Energy Conversion, Computer Engineering, Maintenance Engineering and Management, Electronics, and Aeronautics.
3. Departments of Zoology, Mathematics, Chemistry, Physics and Geology have been recognised by the University Grants Commission under their Special Assistance Programme.
4. The University plans to launch a Foundation Course Lecture Series from the current academic session to supplement various academic programmes. The lectures will provide an exposure to the young minds, to the scientific progress, moral values, nationalism, cultural vistas and humanism.
5. Short term orientation courses for affiliated college teachers to upgrade their skills are also proposed to be organised.
6. Training programmes are proposed to be mounted for non-teaching employees to promote efficiency in university administration.
7. A cluster of villages is proposed to be adopted for carrying out a Research Action Programme with an inter-disciplinary approach to demonstrate university's utility to society.
8. A Housing Programme at a cost of about Rs. 1 crore is also proposed to be launched to meet the housing needs of university employees.

and full of misery and are in and out, blaming the society, the State, our jobs, our family and ultimately our fate. We do not see the incoherency in our day-to day living. In this situation, to my mind, the individual must change himself and reform. He should have the highest respect for life which is evergreen and bountiful and which gives its all to him who loves it and who always counts its blessing. Every day dawns with the glow and light of sun and with the freshness of the morning breeze and life softly whispers in our ears 'Live me—destroy me not', awake and keep alive—rise, do not allow your spirits to be dampened by the past regrets nor bewildered by the plans of tomorrow. For yesterday is but a dream and tomorrow is only a vision; but today well lived makes every yesterday a dream of happiness, and every tomorrow a vision of hope. Look well, therefore, to this day.

What is required, therefore, is to have a surging urge to live and to know to live—not to know but to know how to live and then live with love, interest, zest and passion. It is then that the individual would realise that it is by placing living above thinking that he would be able to shake off the diffidence and distrust which have enshrouded him and it would be patently obvious and clear to him that his every activity whether about the acquisition of knowledge or things is submitted to the test of life itself and of its subserviency to the end of living. He would then see that to him the end of living is just living itself. His approach to life would have a welcome change. The possession of knowledge, property, rank and status would not be an end for him but means to enable him to live with an open, free and trusting mind. Envy, jealousy, hatred, ill-speaking and gossiping would have no room in his living and he would ever seek the best and ever find it. I would, therefore, requests my young friends to live with love, interest, zest and passion.

Friends, remember that no activity touching humanity in general can act in a vacuum. Our actions and thoughts will always be influenced by the environment. Everywhere the talk is about the rapid erosion of values and the consequent pollution of public life. If we have to build a self-reliant and self-sufficient and strong nation, we have to clear the atmosphere of this pollution. This requires the maximum utilisation of our manual resources, but without largely depleting natural resources which cannot be easily regenerated. As Pandit Jawaharlal Nehru said :

> "University stands for humanism, for tolerance, for reason, for the adventure of ideas and for the search of truth. It stands for the onward march of the human race towards higher objectives. If the universities discharge their duties adequately, then it is well with the nation and the people." ☐

Italian Government Scholarships

Italian Government has offered a few scholarships for a **Course on Technology Transfer of Renewable Energy Sources** to be held from 1st Oct. to 31st Oct., 1987.

The course aims at introducing problems, methodologies, organizational and international issues relevant to the process of technology transfer in the field of renewable energy sources. Particular emphasis will be placed on evaluation methods of energy projects and of technological packages suitable for transfer in different realities.

The scholarships will cover boarding, lodging, pocket expenses, tuition fee, medical insurance, return air ticket.

Sponsored candidates with master's degree in science with 5 years professional standing/experience in the field of energy are to be recommended for nomination by 10 August 1987 (age limit 45 years).

Applications in duplicate on the prescribed format duly sponsored by the employer are to be sent to Department of Education (External Scholarship Division), Ministry of Human Resource Development, Shastri Bhawan, New Delhi 110001.

A few scholarships have also been offered by the Italian Government for a **Basic Course on Renewable Energy** to be held from 3rd Nov. to 3rd Dec., 1987.

The course aims at supplying basic scientific notions on the possible application of energy from renewable sources. It will include design concepts and necessary optimization techniques for their exploitation.

The scholarships will cover boarding, lodging, tuition fee, return air ticket, etc. Sponsored candidates with first class degree in science/engineering and 5 years professional standing/experience in the field of Energy should be recommended to the Ministry as per details given above by 10 August 1987.

BITS Introduces M.V.S.

The Birla Institute of Technology & Science, Pilani has introduced a Master of Vocational Studies (MVS) degree course. The M.V.S. degrees are :

- An abstraction, lable and codification of the wide range of knowledge and skills needed in supervisory/vocational settings; and

- A route to train people in the lightest rigour of an application of theory to work-oriented tasks of high excellence defined against vocational settings.

M.V.S. is a four-year integrated first degree vocational programme that is offered at the post 10+2 level. The Bulletin announcing MVS courses states, "Unlike the traditional interpretation of vocational degrees, the M.V.S. aims at equipping a candidate with the wide range of knowledge and skills needed to rise in supervisory positions. The degrees are thus offered in functional areas that have been identified on the basis of current and future manpower requirements.

Thorough the M.V.S., students acquire the fundamental and analytical abilities they need to make and carry out decisions. Foundation courses impart basic knowledge and build analytical minds. Skill based courses provide training in required techniques. Related field, major field and elective courses strengthen functional skills and knowledge and deepen understanding of the changing environment in which modern organisations operate. Instruction in communication and information presentation cultivates oral and written communication skills and develops the ability to present and implement ideas. An entire year of work experience provides on the job training and helps students develop confidence, maturity, responsibility, inter-personal skills and entrepreneurial ability.

Teaching and evaluation are conducted through non-formal Distance Learning and Co-operative education methods."

Currently M.V.S. degrees are offered in the areas of Information Management, Computer Operations and Application, Human Potenial, Rural Development and Paramedical Services.

The following areas may also emerge in future : Bank Management, Graphic Arts, Educational and R & D Operations, Community Development, Consumer Electronics, Publishing Trade, etc.

Courses in Film Appreciation

The universities of Calcutta and Jadavpur are reported to be planning to introduce courses on film appreciation. The courses, now in the final stages of formulation, will be the first in the country to be conducted in the academic sphere. While Calcutta University proposes to introduce the course as a subject at the undergraduate level, Jadavpur University has decided to open a postgraduation department. Both the universities are currently engaged in finalising the administrative arrangements for running the courses.

According to Calcutta University sources the course would the offered at the undergraduate level and the course content will consist of three papers containing 100 marks each. The study of the history of film-making may be included in the first paper. The second paper is expected to contain materials for a comparative estimate of the Indo-Asian, African and European films. The third paper will include a course on the stages of film-making excluding the laboratory work along with the demonstrative appreciation of representative films. The film would be critically appreciated from the standpoint of film-making and their salient feature highlighted.

At Jadavpur University meanwhile, the course would begin at the postgradugte level with eight papers.

The UGC committee which visited the university seems to have been satisfied with the existing infrastructure available at Jadavpur University.

Film circles believe that, if implemented, the new film course would have a far reaching effect on students and on the education system as a whole.

Foundation for Educational TV

A foundation for educational television is being set up shortly to improve and expand telecast of educational programmes in the regional languages. The foundation with an independent legal status, would be entrusted with the task of producing prototype educational software for all sectors of education besides undertaking research in communication methodologies.

The foundation will utilise the services of existing educational institutions, like the educational media research centres and the audio visual research centres, language institutes and media professionals to achieve its objectives.

It would be given non-recurring grants for the creation of service facilities which could be hired out to non-governmental agencies for production of radio and TV programmes and other educational materials.

Rs. 410 lakh UGC Aid for Anna Varsity

The University Grants Commission (UGC) is reported to have sanctioned Rs. 410 lakhs under the Seventh Plan for the development of the Anna University in Madras. The allocation includes Rs. 335 lakhs for engineering, technology and architecture. A sum of Rs. 75 lakhs has already been sanctioned for the faculty of science and humanities.

Among the approved schemes is a new central library with modern facilities including a computer for storage and retrieval of information, and terminals for use by students. The library is to be constructed in two phases during the Seventh and Eighth Plan periods, the allocation for the first phase being Rs. 75 lakhs. A students' centre, a health centre and a book store are also to be established.

The university has already acquired a VAX 11/780 computer system costing Rs. 1.5 crores and the UGC has now sanctioned Rs. 18.5 lakhs for setting up 20 terminals and putting up a building to house these facilities. The computer science and engineering department will function in a building costing Rs. 21.15 lakhs.

The UGC has approved an outlay of Rs. 97 lakhs for staff quarters and Rs. 76 lakhs for students hostels. About half of the cost is to be borne by the State Government.

Course in Light Music

The SNDT Women's University's Department of Music, in collaboration with the Department of Continuing and Adult Education and Extension, proposes to introduce a course in light music. This course will not only strengthen the existing programmes of music but will also help to create a more conducive atmosphere facilitating involvement of the public at large.

The University has been offering music as a subject upto the PhD. level. Diploma and degree courses in light music are also being added.

Academic Staff College for Jodhpur Varsity

The Jodhpur University has been permitted by the University Grants Commission (UGC) to establish an Academic Staff College during the current academic session for providing training to university teachers. According to Vice-Chancellor, Prof. M.L. Mathur, the UGC had also provided a subsidy of Rs. 30 lakh for this purpose. He said that a vocational centre of the Indira Gandhi National Open University was also proposed to be started at the University.

Bridge Course Extended

The Delhi University has decided to continue, for one more year i.e. for 1987-88 academic session, the one-year bridge course meant for students coming from 11+3 or 10+2+2 schemes. Candidates from these schemes must complete this course to be eligible for admission to M.A., M.Com. and M.Sc. Courses.

Bill to Ban Capitation Fee

The Government is contemplating to introduce a bill in the monsoon session of Parliament vesting the All India Council for Techcal Education with statutory powers to effectively check the mushrooming of private technical institutions and to ban capitation fees charged by them for admission purposes. This step is reportedly being taken to curb the commercialisation of technical and professional education.

Refresher Course in Chemistry

A refresher course in Chemistry sponsored by the UGC was held at the Gauhati University from 3-30 June 1987. The objective of the courses was to acquaint the teachers with the Quantum Chemistry and Molecular Spectroscopy (a new paper which has recently been introduced in the syllabus for the undergraduate students). Over 35 teachers from 19 affiliated colleges of the university participated in the course. Apart from the faculty of the Department of Chemistry of the Gauhati University, Prof. B. Majhi (North Bengal University), Prof. I. Haque (Dibrugarh University), Prof. Mihir Choudhury (Indian Association for Cultivation of Science, Jadavpur) and Prof. A.B. Baruah (Iowa State University, USA) also addressed the participants.

Dr. Babasaheb Ambedkar Technical University

The Maharashtra Government plans to set up Dr. Babasaheb Ambedkar Technical University during the current academic session. Courses in petro-chemical engineering are proposed to be offered at this new University. This was revealed by the State Education Minister in Bombay recently.

SC, ST Girls Hostels

The Union Government is reported to have launched a scheme of building hostels for girl students belonging to scheduled castes and scheduled tribes and a sum of Rs. 5 crore has been earmarked for the purpose. Under the scheme, the Centre would provide financial assistance to State Governments and Union Territories on a 50-50 matching basis for construction of hostel buildings for these girls studying in middle and higher secondary schools, colleges and universities.

Environmental Education

The Union Ministry of Environment and Forests has asked the University Grants Commission (UGC) to promotee formal ducation in environment and forestry at the undergraduate and postgraduate levels in universities and research institutes. This step, the Ministry feels, would create an awareness about environment and ecology and lead to availability of experts for environmental impact assessment.

At present environment education forms part of the subjects like zoology, botany, microbiology, civil engineering, agronomy and entomology being conducted at 45 universities. Six universities offer courses in environment education at postgraduate level.

Forestry is being taught at the undergraduate level in eight agricultural universities and eight more universities propose to start the course during the current academic year.

Some universities and research institutes offer subjects pollution control, wildlife management, remote sensing and climatology. A sum of Rs. 6 crores has been provided by the Union Ministry of Environment and Forests for promotion of environmental studies in the Seventh Plan.

Medical Colleges Derecognised

The Medical Council of India is reported to have derecognised three of the nine medical colleges in Bihar. These colleges are located at Bhagalpur, Gaya and Dhanbad.

News from Agril. Varsities

Botanical Pest Control

A six-day International Workshop on "Botanical Pest Control in rice-based Cropping Systems" was inaugurated by Dr. V. Rajagopalan, Vice-Chancellor of Tamil Nadu Agricultural University (TNAU) at Coimbatore recently. The workshop was jointly sponsored by the International Rice Research Institute, Phllippines; Asian Development Bank, Manila and East-West Centre, Hawaii. Dr. V. Rajgopalan in his inaugural address pointed out that although the introduction of semi-dwarf photo-insensitive and high-yielding varieties had revolutionised the rice production in Asia in the last two decades, the conditions that favoured better growth of crops also contributed to the multiplication and spread of pests and diseases. The overuse of synthetic and chemical insecticides had led to the resurgence of

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pests of a new order, besides causing health hazards for people.

Dr. R.C. Saxena, Entomologist, International Rice Research Institute, Philippines emphasised the need for less expensive and locally available selective pesticides based on plant derivatives. Dr. S. Jayaraj, Director, Centre for Plant Protection Studies explained the efficacy of neem products in the control of rice pests. Dr. D. Nangju, Agronomist, Asian Development Bank, Manila in his address said that the project would assist in the development of integrated pest and disease management in which botanical pesticides would be partners. Dr. M.S. Rao of Asian Development Bank spoke on the significance of botanical control of pesticides.

Summer Institute on Surgical Affections

The Faculty of Veterinary Science of the Punjabrao Krishi Vidyapeeth, Akola organised the I.C.A.R. Summer Institute on "Recent Advances in Surgical Affections of Uro-genital System in Farm Animals". Dr. C.M. Sastekar, Joint Director, Animal Husbandry, inaugurated the Institute while Prof. H.B. Ulemala, Vice-Chancellor, presided.

In his inaugural address, Dr. Sastekar appreciated the importance of the topic for field veterinarians and hoped that stress would be laid to solve the day to day problems of the farming community.

Prof. H.B. Ulemale urged that the veterinarians should give maximum service to the farming community to better the condition of animal wealth in the country. Efforts should be made for diversification of livestock. He appreciated the contribution of specialists towards upliftment of economic conditions of small farmers and landless labourers in rural areas.

The deliberations of the Institute which lasted 21 days included theoretical discussions as well as practical demonstrations of recent and advanced techniques used for the treatment. In all 30 participants from the different states of the country took part in this Summer Institute. Eminent Animal Scientists from all over the country were also invited to deliver guest lectures.

We Congratulate....

Dr. M.L. Mathur who has taken over as Vice-Chancellor of the University of Jodhpur, Jodhpur.

Communication

VCs Salary

Sir,

In all Central Universities the Vice-Chancellors have been treated as equal to the Additional Secretary to the Government of India and have been allowed a fixed pay of Rs. 3,000/- like Additional Secretaries (before revision). I do not know of other States but the Government of West Bengal is treating the Vice-Chancellors above the rank of an Additional Secretary of the Government of India and have given the Vice-Chancellors a basic pay higher than that of the Additional Secretaries. While the Vice-Chancellor of Calcutta University is given a salary of Rs. 3,500/- (fixed), (as in the case of a Secretary of the Government of India), the Vice-Chancellors of other State Universities are given Rs. 3,250/- (fixed) plus other allowances as admissible over and above the fixed salary. In pointing this out to the readers of the *University News* my intention is to emphasise the point already accepted by the Government of West Bengal and implemented by it as is reflected in the salaries given to the Vice-Chancellors. The Vice-Chancellors should be treated at least in salary as equal to the Chief Secretary of a State or a Full Secretary of the Government of India. I do not know why the Central Government cannot accept this parity between the Secretary of the Central Government and the Vice-Chancellor of a University. It seems ludicrous that while previously the Vice-Chancellors were treated at par with the Professors of Eminence so far as the scale of pay is concerned, now they have been degraded and given a scale of pay which is not only much lower but the yearly increment in the scale being half of that of the Professor's scale at the later stages. This will reflect how the Government of our country treats this highest authority in an academic institution even though the Government expects and demands almost everything from the Vice-Chancellors.

Yours sincerely,

S.P. Banerjee
Vice-Chancellor
University of Burdwan,
Burdwan

Ministry of Human Resource Development

(Department of Education)

MEXICAN GOVERNMENT SCHOLARSHIPS, 1987-88.

Applications on plain papers are invited from Indian nationals for the award of four Research Fellowships for 1987-88 under the Indo-Mexican Cultural Exchange Programme, offered by the Government of Mexico in the subject-fields of :—

1. Botany ; 2. Spanish Language and Literature ; 3. Physics ; 4. History of Mexico ; and 5. Architecture and Restoration.

Duration : Initially one year and can be extended for one more year in suitable cases.

Value : The Scholarships will consist of a monthly allowance of Mexican pesos 110,000/- which will be paid according to academic background, Life Insurance and Insurance against accident, Medical attention, Inscription charges and fees.

Passage Cost : The cost of passage from Mexico to India will be borne by the Mexican authorities. Travel expenses from India to Mexico will be borne by the candidate or his/her sponsors/employers. Subject to availability of funds, the passage cost may be met by the Government of India provided the candidate is eligible under the rules.

Age Limit : 33 years as on 1.10.1987, relaxable upto 2 years in upper age for Scheduled Caste/Scheduled Tribe candidates. The upper age limit and experience may be relaxed by not more than 3 months at the discretion of the Selection Committee in the case of brilliant candidates.

Essential Qualifications : Uniformly good academic record with 60% marks or more at Master's degree level in the subject chosen, with two years research experience or a Ph.D. degree.

Spanish Language : Basic knowledge of Spanish Language is an essential qualification.

Note : (i) Candidates with equivalent foreign qualification will also be considered. (ii) Master's Degree means M.A./M.Sc./M. Tech. but not M. Phil or Pre-Ph.D. (iii) Where Grades are awarded, the conversion formula of the University/Institution must be indicated. (iv) Candidates must furnish a clear and precise programme of study/research in Mexico. (v) Applications in the subject-fields either than these specified above will not be considered. (vi) Candidates who have already been abroad for study/specialisation training either on a scholarship or on their own, are eligible to apply only if they have been in India for atleast three consecutive years after their return from abroad. (vii) Candidates should have adequate knowledge of the geographical situation, culture and heritage of India and Mexico. (viii) Applications of candidates who are at present abroad will not be considered. (ix) Candidates who do not possess the requisite qualification need not apply. (x) The application form should accompany a crossed Postal Order of Rs. 5/- (and Rs. 1.25 in case of Scheduled Caste/Scheduled Tribe and other backward classes) payable to the Secretary, Ministry of Human Resource Development (Department of Education), New Delhi. (xi) Applications which do not contain Postal Order will be considered incomplete and will not be considered.

Candidates would apply for the above scholarship on a plain paper, furnishing the details/particulars indicated in the application format to the Secretary, Ministry of Human Resource Development, (Deptt. of Education), External Scholarships Division, ES. 3 Section, Room No. 516, B-Wing, Shastri Bhavan, New Delhi-110001 by **7th August, 1987.** The application received late will not be entertained.

FORMAT OF THE APPLICATION

1. Name of the Scholarships Scheme : Mexican Government Scholarships, 1987-88.
2. (a) Subject (b) Sub-subject
3. Name of the Candidate (in Block letters) with full Mailing address
4. Date of birth and the State to which the candidate belongs
5. Whether a member of Scheduled Caste/Scheduled Tribe or a Tribal or aboriginal community. If so, give full particulars

6. Academic record starting from High School/ Higher Secondary

Name of the University/ Board/ Institutions	Examination (s) passed	Year of passing	Division/ Class with position, if any*.	% of marks obtained & position, if any.	Subjects taken

*In case no Division/Class is awarded & only grading is done the conversion formula adopted may be mentioned.

7. Details of Professional, Practical Training & Research Experience, specifying the period and number of papers published, previous employment with name and date of employment, if any.

8. Nature of the present employment, with date of appointment, designation and the name and address of the employers.

9. Have you been abroad ? If so, give full particulars of the country and the period ; also, mention the year of return to India.

10. Proposed programme of study/research/training specifying, (i) the work in which engaged at present (ii) nature and programme of study/research desired (iii) future plans/prospects after the proposed studies/research, and (iv) how are these related to the technical or economic development of India ?

11. Crossed Postal Order of Rs. 5/- (Rs. 1.25 in case of SC/ST candidates etc. (No. and date of Postal Order to be given) may be attached with the form with passport size photograph (one copy).

Note : Employed persons must send their applications fully sponsored by the Employers. However, advance applications will be considered **provisionally** pending sponsorship by employers.

Place : Date :

davp 511/57/87 (Signature of the Candidate)

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AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is open from 9-00 a.m. to 5-30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

ADDITIONS TO AIU LIBRARY

Agrawal, Mamta *Education in modernization: A Study of Hindu and Muslim women.* Delhi, Eduresearch Publications, 1986. viii, 140p.

Almond, Gabriel A. and others, ed. *Progress and its discontents.* Berkeley, University of California Press (c1977) xiv, 565p.

Andhare, Sridhar. *Chronology of Mewar paintings.* Delhi, Agam Kala Prakashan, 1987. 159p.

Arya, Krishan Singh and Shastri, P.D. *Swami Dayananda Sarasvati : A study of his life and work.* Delhi, Manohar (c 1987) ix, 35p.

Banerjee, Projesh. *Indian ballet dancing.* Delhi, Abhinav (c 1983) xiv, 180p.

Basham, A.L. *Wonder that was India.* London, Sidgwick & Jackson (c 1967) xxi, 567p.

Bowes, Pratima. *Between cultures,* Delhi, Allied (c 1986) 230 p.

Chaudhuri, A.B. *Santals: Religion and rituals.* Delhi, Ashish, 1987. 229p.

Clark, Burton R., ed. *School and the university : international perspective.* Barkeley, University of California (c1985) xii, 337p.

Dale, Pater N. *Myth of Japanese uniqueness.* London, Croom Helm (c 1986) 233p.

Gross, Michael J. *Montessori's concept of personality.* New York, University Press of America (c 1978) vii, 144p.

Gupta, Manjul. *Study of Abhinavabharati on Bharata's natyasastra and avaloka on Dhananjaya's dasarupaka: Dramaturgical principles.* Delhi, Gian (c 1987) ix, 327p.

Hutchinson, Walter, ed. *Customs of the world: A popular account of the manners, rites and ceremonies of men and women in all countries.* Delhi, Concept, 1984. 584p.

Karier, Clarence J. *Individual, society and education: A history of American educational ideas.* Urbana, University of Illionois Press (c 1986) xxiv, 459p.

Krishna Murthy, K. *Social and cultural life in Ancient India.* Delhi Sundeep Prakashan, 1982. 162p.

Maikap, S.C. *Cadet Corps in India: Its evolution and impact.* Calcutta, Naya Prokash, 1979. xi, 237p.

Malik, S.C., ed. *Determinants of social status in India.* Delhi, Motilal Banarsidass (c 1986) xi, 192p.

Mann, K. *Tribal women in a changing society.* Delhi, Mittal, 1987. vi, 172p.

Moise, Edwin E. *Modern China: A history.* London, Longman (c 1986) xvi, 256p.

Mookerjee, Ajit. *Ritual art of India.* London, Thames and Hudson (c 1985) 176p.

Morrow, Ann. *Highness: The Maharajahas of India, London,* Grafton Books (c 1986) xiii, 290p.

Ram Avtar Veer. *Music of India 6,000 B.C. to 1000 A.D. 2V.* Delhi, Pankaj, 1986. 280p. : 256p.

Ranchan, Som P. *Anatomy of the Indian psyche.* Delhi, Ajanta (c 1987) viii, 166p.

Sarkar, H.B. *Cultural relations between India and Southeast Asian Countries.* Delhi, Indian Council for Cultural Relations (c 1985) xxii, 355p.

Sasthi, Brata. *India: The perpetual paradox.* Calcutta, Rupa, 1986. 336p.

Shirk, Susan L. *Competitive comrades: Career incentives and student strategies in China.* Berkeley, University of California Press (c 982) xiii, 231p.

Smith, Virginia B. and Bernstein, Alison R. *Impersonal campus.* San Francisco, Jossey-Bass (c 1979) xviii, 135p.

Soran Singh, *Scheduled castes of India: Dimensions of social change.* Delhi, Gian (c 1987) vi, 186p.

Tiedt, Pamela L. and Tiedt, Iris M. *Multicultural teaching: A handbook of activities, information, and resources.* Boston, Allyn and Bacon (c 1986) xii, 358p.

Upreti, H.C. *Youth politics in India.* Jaipur, Printwell Publishers (c 1987) xi, 128p.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Goswami, Rashmi. *Language of music.* NEHU.
2. Sahoo, Dibakar. *The concept of justice: A critical study.* Berhampur.
3. Synrem, H. Kelian. *Revivalism in Khasi Society.* NEHU.
4. Tripathi, Surendra Kumar. *Meemansa darshan mein Prabhakar Sampradaya.* Bundelkhand.

Language and Literature

English

1. Bandyopadhyay, Salilbaran. *William Golding: His mind and art.* Calcutta.
2. Bisht, Priya Vrat. *The feminine principle in the modern Indo-English novel: An inter-disciplinary approach.* HP.
3. Markandeya, Rakesh. *Letters of Swami Vivekananda: A study of his mind ane art.* H.P.
4. Niyazi, Mehrunnisa Mukhtar. *Society and the individual in T.S. Eliots poetry and plays.* Nagpur.
5. Pakle, Gajanan Shankar. *Sri Aurobindo's use of image, symbol and myth with particular reference to his poetry.* Shivaji.
6. Ramakrishna Rao, Avasarala. *Apocalyptic vision in the novels of George Orwell.* Andhra.
7. Srinivasan, Padma. *Mysticism in English and Tamil poetry: comparative study.* Madurai.

Sanskrit

1 Arya, Guddi. *Valmiki Ramayan mein pramukh patron ka charitra chitran.* Kumaun.
2. Bora, K.S. *Vishanshatkiya Sanskrit kavya sahityasyaparyalochanam.* Kumaun.
3. Lohani, Manju. *Mahakavi Padamshastri:]Vyaktitva evam krititva.* umaun.
4. Misra, Shobha. *Sanskrit sahitya mein Shrimati Indira Gandhi: Ek sameekshatmak adhyayan.* Kumaun.
5. Pattanayk, Dilipkumar. *God and the individual self in the Nyaya Philosophy.* Calcutta.
6. Raj Kumar. *Prachya vyakaran shastra ke prachar mein Maharishi Dayanand ka Yagdan.* Panjab.
7. Razdan, Satya Bhama. *Kashmiri bhasha kee Sanskrit moolak shabdavali.* Jammu.
8. Salunkhe, Anna Hari. *A critical study of the Carvaka School of thought.* Shivaji.
9. Sharma, N.C. *Avanti Sundari katha aa sameekshatmak adhyayan.* Kumaun.
10. Sharma, S.G. *Pt. Shree Trayambak Sharma praniti Shri Swami Vivekanand Charitam Mahakavya ka samalochnatmak adhyayan.* Kumaun.
11. Tewari, N.C. *Acharya Sharadatnaya virachit bhav prakashnasya sameekshatmak adhyayan.* Kumaun.

Punjabi

1. Rajinder Kaur. *Kartar Singh Duggal de chonveyan novelan da alochanatmak adhyanan.* Delhi.
2. Sharma, Shushil. *Contemporary society as reflected in Punjabi folk songs in Jammu region.* Jammu.

Hindi

1. Awasthi, Mahendra Prasad. *Ram Kavya kee prishth bloomi mein Lal Das krit Avadh Vilas ka adhyayan.* Bundelkhand.
2. Belgaumwale, Raziyabegum Anwarhussain. *Comparative study of drama of Upendranath Ashk and Dr. Laxmi Narayanlal.* Karnatak.
3. Bora, Pushp Lata. *Nai kavita mein prakriti chitran: San 1950 se December 1980 tak.* Kumaun.
4. Dikshit, Seema. *Vishram Sagar ka kavyashastriya adhyayan.* Bundelkhand.
5. Dubey, Premnarayan. *Acharya Dr. Hazari Prasad Dwivedi ka Upanyas sahitya.* Ravishankar.
6. Dwarika Prasad. *Nai kavita mein manav vad.* Delhi.
7. Gupta, Kusum. *Narmada Prasad Khare : Vyaktitva evam krititva.* HS Gour.
8. Jain, Surekha. *Bundeli lokgeeton mein upasana ka swarup.* Bundelkhand.
9. Kamla Pati. *Saket aur Uttar Ram Charitam ka tulnatmak adhyayan.* Kumaun.
10. Khare, Vinod Kumar. *Rajdhar Satsai ka kavyashastriya anusheelan.* Bundelkhand.
11. Nakate, Rama Krishna. *Amritlal Nagar: Vyaktitva aur Krittiva.* Shivaji.
12. Pande, Padmakar. *Hindi patrakarita aur rashtriya andolan, 1920-1947.* Delhi.
13. Ranvir Singh. *Hindi upanyas mein manavvad, 1947-72.* Delhi.
14. Sharma, Bharti. *Sumitranandan Pant ke kavya granthon kee bloomikaon ka alochnatmak adhyayan.* Durgawati.

15. Sharma, Deepa. *Yashpal ke upanyason mein rajnitik chetna ka vikas.* Kumaun.

16. Sharma, Madhu Bala. *Pant kee kavya bhasha ka kavya shastriya adhyayan.* Delhi.

17. Shrivastava, Dharmendra Nath. *Hindi upanyason mein samajik vighatan, 1950-1975.* Bundelkhand.

18. Shukla, Vimalesh. *Awadh Vilas mahakavya ka shodh parak anusheelan.* Bundelkhand.

19. Tiwari, S.M. *Sumitranandan Pant ke kavyetar sahitya ka adhyayan.* Kumaun.

20. Tiwart Ranjana. *Bundeli shabd sampada ka sanskritik anusheelan.* HS Gaur.

21. Tripathi, Shyam Mohan. *Shuddha Dwaitvad aur uska adhunik Hindi Krishna kavya per prabhav.* Bundelkhand.

22. Tyagi, Pratibha. *Radhaswami sampradaya ka sahityik evam darshnik vivechan.* Bundelkhand.

Bengali

1. Mukhopadhyay, Jyotiramayi. *Rabindra sahitya itihas chinta-o-tahar vivartan, 1875-1900.* Calcutta.

Marathi

1. Joshi, Dattatraya Nageshrao. *Incarnation of English poetry in Marathi, 1818-1920.* Karnatak.

2. Joshirao, Neela B. *Shree Dasvothatil bhaktimarg.* Nagpur.

3. Uttam Govind. *Shree Sharatchandra Tongo yanchya samagra sahityacha chikitsak abhyas.* Nagpur.

Gujarati

1. Dholaria, B.J. *A critical study of folktales of Saurashtra with special reference to motif and technique.* Saurashtra.

2. Marvania, M.L. *Short stories of Jayant Khatri: Their place and impact on short stories of Gujarati literature.* Saurashtra.

Tamil

1. Jalaja, K.R. *Political ideas in the three great epics.* Madurai.

2. Kamatchi, P. *Periyapuranam Kattum samudhaya nilai.* Madurai.

3. Roselet, S. *Kambarayanathil Purathinai.* Madurai.

4. Sankaravallinayagam, A. *Life history and literary service of V.O.C.* Madurai.

Telugu

1. Narsaiah, S. *Desi matre in Telugu: Its origin and Development.* Osmania.

Geography

1. Gupta, Devicharan. *Integrated area development of Tehsil Naraini in Banda District.* Bundelkhand.

2. Rinawma, P. *Geomorphology and agricultural development in Lunglei District, Mizoram.* NEHU.

3. Sahu, Kiran. *Spatial patterns of socio-economic changes in Bastar District.* Ravishankar.

4. Shukla, Ram Kishore. *Ramayana: A study in ancient geography.* Bundelkhand.

History

1. Chhibbar, Shashi Prabha. *Social, ecomomic and cultural history of Kashmir in the 17th century.* Jammu.

2. Deshmukh, Kiran Vishwasrao. *Madhyayugeen Marathvangyateel murtishastra.* Nagpur.

3. Gupta, Uma Rani. *Non-cooperation movement in Delhi.* Delhi.

4. Kadam, Jaysinh Jagannath. *Working of Dyarchy in Bombay Presidency, 1921-1937.* Shivaji.

5. Kikani, D.J. *Historical, educational, social and cultural development of Rajkot.* Saurashtra.

6. Negi, K.S. *Aupniveshik kal mein Mewar: Uttarakhand mein samajik arthik pichcharepan ka itihasik adhyayan.* Kumaun.

7. Sarkar, Chandiprasad. *The Bengali Muslims: A study in their politicization.* Calcutta.

8. Sharma, Vijay Kumar. *Vaishnavism in Jammu: A study based on the Baishnava shrines of the Jammu region.* Jammu.

9. Vyas, R.T. *The cultural contribution of the Swaminarayan Sampradaya in Gujarat during the nineteenth century.* Saurashtra.

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M.D. (Pathology & Bacteriology)/
M.D. Pathology with Bacteriology)/
Ph.D. (Pathology)/
D.Sc. (Pathology).

Teaching/Research Experience

As Lecturer in Pathology Department of a Medical College with experience and special interest in Haematology for atleast five years.

II-Desirable : Original research publications in the speciality in Indian and foreign journals.

Note : The selected candidate will be responsible for organising and supervising the Blood Bank servicesin addition to Haematology work,

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6. Reader in Pharmacology, Department Ilmul Advia, A.K. Tibbiya College.

Qualifications : I-Essential : 1. M.D. (Pharmacology).

2. Knowledge of Urdu.

3. Teaching experience of atleast five years in the subject.

II-Desirable : Published work.

7. Reader in Moalijat-e-Tib, Department of Moalijat, A.K. Tibbiya College.

Qualifications : I-Essential : (i)Degree/Diploma in Unani Medicine from a University established by law or a Statutory Board/Faculty/Examining body of Indian Medicines or equivalent.

(ii) Teaching experience in a recognised Institution for five years.

II-Desirable : (i) Post-graduate qualifications in Unani from a recognised Institution/University Established by law.

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8. Lecturers in Ilmul Advia, Department of Ilmul Advia, A.K. Tibbia College.

9. Lecturer in Munafeul Aza (Physiology), Department of Kulliyat, A.K. Tibbiya College.

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(ii) Teaching experience in a recognised Institution for three years.

II-Desirable : (i) Post-graduate qualifications in Unani from a recognised Institution/University established by law.

(ii) Original published papers/books on the subject.

Note : If persons with requisite experience are not available the condition of experience may be relaxed in suitable cases at the discretion of the Selection Committee.

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11. Reader in Chemical Engineering, Department of Chemical Engg.

Qualifications : I-Essential : A good academic record with a Doctor's degree in a relevant field. About five years experience of teaching and/or research and development.

Provided further that candidates not possessing Ph.D. may be considered if they have to their credit equivalent research published work or design/ development work of a high order either in the institution or in an industry.

OR

In the case of persons to be recruited from industry or professional fields, candidate should possess good academic record with recognised professional work of about 7 years which should include innovation and, or research and development.

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Field of Specialisation

To be specialized in one or more of the following areas :

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Lecturers

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12. Lecturers in Architectural Assistantship, University Polytechnic.

Qualifications : Bachelor's degree in Architecture plus two years of relevant professional experience.

OR

Master's degree in Architecture and one year's relevant professional experience.

Provided further that if a candidate does not possess a Master's degree in Architecture and Professional experience or a person possessing such experience is not found suitable, the person appointed will be required to obtain the desired professional experience within a period of five years on his appointment failing which he will not be able to earn future increment until he fulfils this requirement.

13. Lecturer in Sunni Theology, Department of Sunni Theology.

Qualifications I-Essential : (a) Master in Theology (M. Th.)

OR

M.A. in Arabic or Islamic Studies with Fazil-e-Madarsa.

OR

Fazil-e-Madarsa with at least three years teaching experience/evidence of research.

OR

Foreign qualifications equivalent to Master's degree.

(b) Working knowledge of English.

II. **Desirable :** (1) Ph.D. degree or published work of high standard.

(2) Some Teaching experience in a University or Madarsa of repute.

14. **Lecturer in Chemistry :** (Temporary), Department of Chemistry.

Qualifications

I. **Essential :** (a) A Doctor's degree or research work of an equally high standard; and

(b) Good Academic record with atleast second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing inter-disciplinary programmes the degrees in (a) and (b) above may be in relevant subjects.

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Qualifications

I. **Essential** : (i) M.B.B.S. (ii) Post-graduate Diploma in a Clinical subject. (iii) Three years experience as Resident or Registrar in a teaching Hospital.

II. **Desirable** : Experience of Casualty work.

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Qualifications

I. **Essential** : (i) First or high Second Class Master's degree in Physics with specialization in Electronics.

(ii) Research work of a high standard.

II. **Desirable** : (i) Five years experience of teaching undergraduate classes.

(ii) Evidence of being engaged in innovative teaching or production of teaching materials.

18. **Programmers, Computer Centre** (Three posts)

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OR

A postgraduate Diploma or degree in Computer Science with at least two years experience as a Programmer or its equivalent at a Computer Centre.

II-Desirable : A higher degree in Computer Science or three years experience of developing and maintaining Computer Soft Ware and Operating System.

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2. To provide assistance to users in Program development;

3. To participate in the teaching and other academic Programmes of the Centre;

4. To assist the Computer Centre in its operational aspects and any other duties that may be assigned from time to time.

19. Senior Technical Assistant (one post) (Leave vacancy) Department of Medicine, JN Medical College.

Scale of Pay : Rs. 1640-60-2600-EB-75 2900 plus allowances (Revised Scale).

Qualifications : **I-Essential** : B. Sc. with previous experience of atleast five years in a Biochemical/Pathological Laboratory of a Medical College.

Must be well versed in Biochemical & Pathological investigations for Medical research and patients care.

II-Desirable : Diploma in Medical Lab. Technology (Pathology)

Note : The eligible candidates will have to undergo a practical test before interview.

20. Senior Technical Assistant (Theatre) (one post) (Permanent) Department of Ophthalmology.

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OR

B.Sc. with Certificate/Diploma in Nursing or Ophthalmic Techniques like Diploma in Optometry or Diploma in Orthoptics. Two years experience of working as Theatre Technician in reputed Eye Hospital/Medical College.

OR

Intermediate (Science) or equivalent with Certificate/Diploma in Nursing or ophthalmic techniques like Diploma in Optometry/Orthoptics. Five years experience of working as Theatre Assistant in reputed Eye Hospital/Medical College,

II. Desirable : Experience of working in O.T. specially in Rural Eye Relief Camps.

Note : The incumbent is required to work under Rural Eye Care Programme of the 20 Point National Programme.

21. Senior Technical Assistant (Dawasaz Gr. I) (one post) (permanent) A.K. Tibbiya College Hospital

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Qualifications : I-Essential: Educational: High School or equivalent oriental qualifications recognised by the University

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II-Desirable : Three years experience in Dawasazi (Pharmacy) will be preferred.

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22. Assistant Security-Cum-Fire Officer, Medical College Hospital

Scale of Pay : Rs. 1640-60-2600-EB-75-2900 plus allowances. (Revised)

Qualifications I-Essential : (i) Bachelor's degree

(ii) Five years experience involving security in some Government/Semi Government/Private Institution of repute.

(iii) Knowledge of Fire fighting techniques.

II-Desirable : (i) A good physique and personality.

(ii) Age below 40 years.

23. Health Educator, Department of Community Medicine

Scale of Pay : Rs. 1640-60-2600-EB-75-2900 plus allowances (Revised)

Qualifications I-Essential : Post-Graduate Diploma in Health Education.

II-Desirable : Three years experience in Health Education.

Note : Selected candidates will have to work at Rural Health Training Centre of the Department at Jawan about 15 Kms. from the Medical College,

24. Senior Technical Assistant, Plastic Burn and Facio-Maxillary Surgery Unit (One post), Department of General Surgery.

Scale of Pay : Rs. 1640-60-2600-EB-75-2900 plus allowances (Revised)

Qualifications I-Essential : B.Sc. with training experience in Plastic Surgery.

II-Desirable : Five years experience of working in Plastic Surgery Operation Theatre

Note : Qualifications may be relaxed in case of person having long experience in Plastic Surgery.

25. Mechanic (Motors), Central Automobile Workshop

Scale of Pay : Rs. 1400-40-1800-EB-50-2300 plus allowances (Revised)

Qualifications I-Essential : 1. (i) Diploma in Automobile Engineering with not less than 5 years' experience in any workshop of repute

OR

(ii) I.T.I. certificate in Motor Mechanic's Trade with not less than 7 years' exoerience in any Workshop of Repute.

OR

(iii) High School with not less than 10 Years experience in any Workshop of Repute

and

2. Having Licence of Heavy Vehicle Driving

(The academic qualifications of those technical staff who have put in atleast 10 years of service in the immediate lower grade in the University in the job/trade may be relaxed in suitable cases).

Experience : Experience relaxable in cases of candidates otherwise found suitable.

Note : The eligible candidates will have to undergo test before interview.

Shortly Releasing

Handbook of Medical Education-1987

New Technologies in Higher Education

Studies in Distance Education

Address Enquiries to :

Under Secretary (Publications)
ASSOCIATION OF INDIAN UNIVERSITIES
AIU House, 16 Kotla Marg,
New Delhi-110002

Telephones : **3310059, 3312305 3312429 and 3313390**
Telex : **31 5578 AIU IN** *Gram* : **ASINDU**

26. Technical Assistant (Instrumentation) (two posts) (Permanent) Department of Electrical Engineering.

Scale of Pay : Rs. 1400-40-1800-EB-50-2300 plus allowances. (Revised)

Qualifications : Essential : Diploma in Electrical Engineering and/or Electronics Engineering with two years experience in operation, repair and maintenance of equipment used in Electrical Engineering Laboratories of a University or a reputed firm.

OR

Ordinarily 8 years Schooling followed by 8 years experience as above.

OR

Trade Certificate and five years experience as above.

Note : The candidates will have to undergo a practical test before interview.

27. Senior Pharmacist (One post) (Permanent) A.K. Tibbiya College.

Scale of Pay : Rs. 1400-40-1800-EB-50-2300-plus allowances. (Revised)

Qualifications: I-Essential: Educational: High School or its equivalent oriental qualifications recognised by the University.

Technical : Diploma in Unani Medicine or Sahayak Hakim recognised by the State Board/University.

II-Desirable : Three years experience in Dawasazi (Pharmacy) will be preferred.

Note : The candidates having good experience in Dawasazi (Pharmacy) may be relaxed in suitable cases in respect of Technical qualifications.

28. Technical Assistant (Automobile Stores) (One Post) (Permanent) Central Automobile Workshop.

Scale of Pay : Rs. 1400-40-1800-EB-50-2300 plus allowances (Revised)

Qualifications : I-Essential : 1. B.A./B. Com./B.Sc. Dip. Engineering.

2. Seven years experience of purchasing and accounting of Engg. stores, including office work in a Govt. / Semi Govt. or commercial organisation.

II-Desirable : Knowledge to deal the Road Tax, Insurance and Fitness Taxes of vehicles etc.

Note : Qualifications are relaxable on the basis of high experience in this field.

29. Steno-Typist-Cum-Office Assistant (One post) (Temporary) Career Planning Centre, A.M.U. Women's College.

Scale of Pay : Rs. 1400-40-1600-50-2300-EB-60-2600 plus allowances. (Revised)

Qualifications : I-Essential : At least Bachelor's Degree with speed of 100 w.p.m. in English short-hand and 50 w.p.m. in English Typing.

II-Desirable : (a) Three years experience as Steno in a Commercial/Educational Institution.

(b) Experience of handling Electronic Tapewriter and Word Processor.

(c) Experience of handling Telex & PBX Machines.

30. Technical Assistant (Instrumentation) (One Post) University Polytechnic.

Scale of Pay : Rs. 1400-40-1800-EB-50-2300 plus allowances. (Revised)

Qualifications: Essential: Post-Matric Diploma in Electrical/Electronics with two years experience.

OR

Trade certificate in Electrical/Electronics with seven years experience in Institute/Workshop/Faculty of repute.

Note : The eligible candidate will have to undergo a practical test.

31. Public Health Nurse, Community Medicine Deptt., J.N.M.C.

Scale of Pay : Rs. 1320-30-1560-EB-40-2040 plus allowances. (Revised)

Qualifications : Essential : (a) Higher Secondary or equivalent.

(b) Diploma in Public Health Nursing from a recognised Institution.

Desirable : B.Sc. (Public Health Nursing) or equivalent.

32. Conservationist (One post) (Permanent) Sir Syed Academy.

Scale of Pay : Rs. 1400-40-1800-EB-50-2300 plus allowances. (Revised)

Qualifications : I-Essential : 1. M.Sc. in Chemistry.

2. One year Diploma from National Laboratory for conservation of Cultural properties located at Lucknow (Department of Government of India).

OR

Diploma from National Archives, Government of India, New Delhi.

II-Desirable : 1. Some experience of working in an Institution for preservation of cultural objects or MSS.

2. Knowledge of Urdu/Persian.

33. Micro-Photographist (One post) (Permanent) Sir Syed Academy

Scale of Pay : Rs. 1400-40-1800-EB-50-2300 plus allowances. (Revised)

Qualifications : 1. M.Sc. in Physics.

2. One year Diploma in Photography from a recognised Institution or certificate in Photography with five years of experience of microfilming.

3. Knowledge of Urdu/Persian.

34. Semi-Professionals (Consolidated) MA Library & other libraries.

Scale of Pay : Rs. 1320-30-1560-EB-40-2040 plus allowances (Revised)

Qualifications : I-Essential : B.A./B.Sc./B.Com with B. Lib. Sc. or one year postgraduate Diploma in Library Science.

II-Desirable : Ability to prepare catalogue cards by English/Urdu typewriting.

35. Nuskhaband (One Post) (Permanent) A.K. Tibbiya College Hospital.

Scale of pay : Rs. 1320-30-1560-EB-40-2040 plus allowances. (Revised)

Qualifications: I-Essential: Educational: High School or its equivalent oriental qualification recognised by the University.

Technical: Diploma in Unani Medicine or Sahayak Hakim, recognised by the State/Board/University.

II-Desirable : Three years experience in Nuskhabandi. will be preferred.

Note : Those candidates who have applied in response to advertisement No. 13/86-87 dated 18.9.86 and 22/86-87, dated 27-1-87 need not apply again. They will be considered on the basis of their previous applications.

36. Senior Laboratory Assistant (Architecture) (One post) University Polytechnic.

Scale of Pay : Rs. 1320-30-1560-EB-2040 plus allowances. (Revised)

Qualifications : I-Essential : Diploma in Drafting & Designing (Architect/Civil) with at least five (5) years experience.

OR

Certificate in Draftsmanship (Architect/Civil) with at least 7 years experience.

Note : Eligible candidates will have to undergo a practical test.

37. Lower Division Clerk (Records) (Permanent) Department of Anaesthesiology

Scale of Pay : Rs. 950-20-1150-EB-25-1500 plus allowances. (Revised)

Qualifications I-Essential : (a) B.A. B.Sc./B.Com.

(b) Good knowledge of English typewriting with minimum speed of 40 w.p.m.

II-Desirable : Minimum 3 years experience of record keeping.

Note : Eligible candidates will have to undergo a typing test before interview. Those who will qualify the typing test will be called for interview.

38, Clerk (Records) Department of Biochemistry, J.N.M.C.

Scale of Pay : Rs. 950-20-1150-EB-25-1500 plus allowances. (Revised)

Qualifications : I-Essential: B.A./B.Sc./B.Com.

(a) Two years experience of working in the office of a Department engaged in teaching/research in Biochemistry, Biology.

(b) Ability to type with minimum speed of 30 w.p.m. to be verified by typing test.

39. Clerk (Records) (Permanent) J.N. Medical College Hospital

Scale of Pay : 950-20-1150--EB-25-1500 plus allowances. (Revised)

Qualifications : I-Essential : B.A./B.Sc./B.Com.

(a) Two years experience in collection and compilation of Medical data & interpretation.

(b) Ability to type with minimum speed of 30 w.p.m. to be verified by a typing test.

40. Electrician-cum-Pump Operator (One post) (Permanent) Registrar's Office.

Scale of Pay : Rs. 950-20-1150-EB-25-1500 plus allowances. (Revised)

Qualifications : (i) High School/Jr. High School and I.T.I. Certificate in the trade of Fitter or Mechanic or Electrician.

(ii) Atleast five years practical experience in the operation and maintenance of electrically driven pumping plants and other installations in connection with tube-well and Sump-well.

He should be able to rectify the minor electrical and mechanical defects or faults.

Note : Qualifications, other than I.T.I. certificate, may to relaxed in suitable & exceptional case.

Note : The eligible candidates will have to undergo a practical test before interview.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class Railway fare only.

Prescribed application forms and instructions may be had from the Assistant Registrar (Selection Committees), Aligarh Muslim University, Aligarh on payment of Rs. 10/- for posts at Sl. No. 1 to 18 and Rs. 7/- for the remaining posts to be deposited in the Cash Section. Finance Office, Aligarh Muslim University or through an Indian Postal Order payable to the Finance Officer, Aligarh Muslim University, Aligarh personally or by sending a self-addressed stamped envelope of size of 9" X 4".

Last date for receipt of applications is **17.8.1987** (during office hours). Incomplete applications and those received late will not be considered.

Jawed Usmani
IAS
REGISTRAR

ROHILKHAND UNIVERSITY

BAREILLY

ADMISSION NOTICE

SESSION 1987-88

Applications are invited for admission to the following courses for the academic session 1987-88. Forms duly filled alongwith the attested copies of certificates/testimonials must reach the undersigned upto **16th August, 1987**.

1. **Faculty of Arts**—Master degree in the following subjects—

A—Ancient History & Culture.

B—Applied & Regional Economics.

2. **Faculty of Law**—Master of Law (LL.M.)

3. **Faculty of Life Science**—Master degree the following subjects—

1. Plant Science.
2. Animal Science.

The admission forms alongwith prospectus can be had from the University Office on cash payment of Rs. 10/- only or from the Deputy Registrar (General) by registered post by sending a crossed Bank Draft/I.P.O. worth Rs. 16/- only drawn in favour of Finance Officer, Rohilkhand University, Bareilly payable at Bareilly.

Admission will be made in order of merit from amongst the candidates applied for admission in the respective departments according to the number of seats available. If interview is arranged for selecting suitable candidates, applicants shall be informed accordingly and no TA/DA will be paid by the University.

B.S. Gupta

REGISTRAR

BHOPAL UNIVERSITY

BHOPAL

Advertisement No. 1/87

No. 2302/Estt/87 **Dated : 16-7-87.**

Application on plain paper 8 (eight) copies are invited for the post of DEAN, COLLEGE DEVELOPMENT COUNCIL, in the pay scale of Rs. 1500-60-1800-100-2000-125/2-2500, so as to reach the Registrar on or before **10-8-1987**.

Applications should be accompanied with crossed Indian Postal Order of Rs. 10/- in favour of Registrar, Bhopal University, Bhopal and attested copies of Marksheet/Certificate etc.

Minimum Qualification & Experience : 'University Professor **OR** Post Graduate College Principal **OR** Class-I Officer of the University of 10 years standing. The first appointment shall be for 3 years and the incumbent may be reappointed for another term of 3 years but he/she shall not continue beyond the age of 65 years.

No TA/DA will be admissible to the candidates if called for interview. The Selection Committee may consider the candidature of any eminent/suitable person in absentia.

Note : Candidates who have already applied previously in response to the Advt. No. 5/85 need not apply again.

Dr. R.B. Malaviya
REGISTRAR

UNIVERSITY OF DELHI

ESTAB/IV/110/87/ **Dated the 13th July, 1987**

Applications in the prescribed form are invited for the following posts :

Sl. No.	*Department*	*Post*	*No. of Vacancies*	*Special/Desirable Qualifications*
1.	Arabic	Reader	One	—
2.	Chemistry	Professor	One	—
3.	Education	(i) Professor	One	—
		(ii) Lecturer (Teaching of English)	One	(i) 3 years experience of teaching in a School or in a Training College (ii) Specialized qualifications in the teaching of English.
		(iii) Junior Teacher in Basic School	One	Music as a subject at the Secondary level or at a teachers training level.
4.	Geology	(i) Reader	One	Structural Igneious and Metamorphic Petrology.
		(ii) Lecturer	One	Petrology, Geoexploration, Marine Geology, Geophysics and Economic Geology.
5.	History	(i) Professor	One	Medieval Indian History.
		(ii) Reader	One	Ancient Indian History
6.	Hnman Resource Development Cell	Research Associates	Two	—
7.	Modern European Languages	(i) Professor of Russian Literature & History	One	—
		(ii) Lecturer in Russian	One	—
8.	Modern Indian Languages	Lecturer in Telugu	One	(i) Ancient Telugu Literature (ii) Sanskrit and experience of language teaching.
9.	Philosophy	(i) Professor	*One	Minimamsa
		(ii) Readers	*Two	(Out of these two Readers One position to be filled up by a traditional pandit with specialisation in Dharamshastra).
		(iii) Lecturer	*One	—
10.	Zoology	(i) Professors	Four	Cell Biology, Endocrinology, Entomology, Fish Biology, Ecology, Immunobiology.
		(ii) Readers	Three	Animal Behaviour, Cell Physiology, Limnology, Animal Systematics, Neurobiology.

SCALES OF PAY FOR THE POSTS ARE

Professor	Rs. 1500-60-1800-100-2000-125/2-2500	Pre-revised. To be revised.
Reader	Rs. 1200-50-1300-60-1900	
Lecturer	Rs. 700-40-1100-50-1600	
Research Associate	(A) Rs. 1400/- p.m. fixed (B) Rs. 1600/- p.m. -do- (C) Rs. 1800/- p.m. -do- (D) Rs. 2000/- p.m. -do-	On the recommendation of the Selection Committee.
Jr. Teacher	Rs. 1200-30-1560-EB-40-2040 (Revised)	

All posts except of Research Associate carry D.A., C.C.A. and H.R.A. etc. as admissible under the rules in force in the University from time to time.

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*For 5 years but likely to continue.

Essential Qualifications for Professorship

An eminent Scholar with published work of high quality actively engaged in research. 10 years' experience of teaching and/or research. Experience of guiding research at doctoral level.

Or

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Readership

Good academic record with atleast second class Master's degree in a relevant subject with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research, or (ii) innovation in teaching methods or (iii) production of teaching materials.

5 years experience of teaching in under-graduate/post graduate classes and/or post-doctoral research work with evidence of published work.

Note : Second class would mean at least 50% marks in the subject or equivalent grade.

LECTURERSHIP : (Other than Lecturership in Russian and Education)

(a) A Doctorate degree or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a Foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degree in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax the requirement of at least second class in Master's degree examination in terms of level achieved at the said examination as prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's/M. Phil. degree or give evidence of research of high standard within ten years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Lecturership in Russian

(a) A Doctor's degree or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree or M. Phil degree from an Indian University or an equivalent degree from a foreign University. Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (a) and (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable a person possessing a good academic record may be appointed on the condition that he will have to obtain a Doctor's/M. Phil. degree or give evidence of research work of equivalent high standard within 10 years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Lecturership in Education

(a) A doctor's degree in education or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent Degree from a foreign University.

Or

(a) A Doctor's degree in any University discipline or research work of an equally high standard; and

(b) Good academic record with an M. Phil degree in Education (which may be acquired while in service) from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary programmes, one of the degrees in (a) and (b) above may be in relevant subjects, the other being in Education.

Provided that if the Selection Committee is of the view that the Research work of a candidate as evident either from his thesis or from his published work is of very high standard it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable a person possessing a good academic record (Weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's/M. Phil degree or give evidence of research work of equivalent high standard within ten years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

For determining "good academic record" the following criteria shall be adopted.

1. (i) A candidate holding a Ph.D./M. Phil. degree should possess atleast a second class Master's degree; or

(ii) A candidate without a Ph.D./M. Phil degree should possess a high second class Master's degree and second class in the Bachelor's degree; or

(iii) A candidate not possessing Ph.D./M.Phil degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

2. Persons having secured at least 55% marks or more shall be deemed to have passed that examination in the high second class.

Research Associate

The candidates should have M.A./M. Com./M.B.A. or other equivalent degree with a high second class (Second class starts at 50%). In addition they should have at least two years' research experience as evidenced by published papers in standard journals.

The selected candidates will get fixed emoluments in the range of Rs. 1400-2000 and the appointment will be initially for a period of 2 years which is renewable up to a total tenure of 5 years.

Jr. Teacher (Basic School)

1. Hr. Secondary pass of a recognised Board/University with an elective subject in the required language at the Matric level.

2. 2 years teacher training certificate from the recognised institution.

Or

1. Intermediate or equivalent from the recognised Board/University with an elective subject in the required language at the Matric level.

2. One year Teacher's training certificate from a recognised Institution.

The prescribed application forms can be had from the Information Section of the University either personally or by sending a self-addressed envelope (size 13cm X 28 cm) with postage stamps worth Rs. 5.90 paise.

The candidates will have to produce the original documents relating to their age, qualifications, experience etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates, mark sheets, published research articles etc. should be addressed to the Registrar. The last date prescribed for receipt of applications **14-8-87**.

Note: 1. It will be open to the University to consider the names of suitable candidates, who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all the posts on the recommendations of the Selection Committee.

2. Canvassing in any form by or on behalf of the candidate will disqualify.

3. Candidates from outside Delhi when called for interview will be paid to and fro single second class rail fare.

4. The University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.

Madan Mohan
REGISTRAR

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN [illegible] tan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157

University News

ONDAY, AUGUST 3, 1987

Rs. 1.50

Rural Development in India

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Kerala State Open University

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Micro-Wave Communications Link

●

Towards Equal Status

●

The Call of the Himalayas

●

'Permaculture' Workshop

UNIVERSITY GRANTS COMMISSION

BAHADUR SHAH ZAFAR MARG, NEW DELHI

Applications are invited by the University Grants Commission for the award of **RESEARCH ASSOCIATESHIP** during the year 1986-87 as under :

(1) Research Associateships in Science & Humanities including Social Sciences and Engineering & Technology (5 awards each are reserved for Nehru Studies, Gandhian Studies and National Integration)—General Category 150 Awards.

(2) Research Associate in Science, Engineering & Technology and Humanities including Social Sciences for SC/ST scholars : 40 Awards.

(3) Research Associate in Science, Engineering and Technology and Humanities including Social Sciences for Physically Handicapped including Blind and Mute : 30 Awards.

VALUE : The Research Associateships will be awarded in four categories viz. A, B, C, & D and carry the following emoluments :

Category 'A' : Value Rs. 1,400/- p.m.; Category 'B' : Value Rs. 1,600/- p.m.; Category 'C' : Value Rs. 1,800/. p.m.; Category 'D' : Value Rs. 2,000/- p.m.

The Research Associate once appointed at a particular point will get an annual increment of Rs. 100/- p.m. subject to the total emoluments including increments not exceeding Rs. 2000/- p.m.

The Research Associateships carry a contingency grant of Rs.5000/- per annum for approved contingent expenditure. The Associateship and the contingency grant are exempted from Income Tax. Reader's allowance of Rs. 250/- p.m. is admissible in the case of Blind scholars.

HOUSE RENT ALLOWANCE : Single seated flat-type accommodation will be provided to all the Research Fellows/Associates by the University or Institution as far as possible. In case, the Research Fellows and Associates are not accommodated as above, they would be entitled to House Rent Allowances on the same basis as admissible to teachers receiving equivalent salary.

The Research Associateships are tenable at any University/College or Institution approved by under the University Grants Commission Act for receiving Central Assistance, Institutions of National Importance and Institutions for Higher Education approved by the Ministry of Education, State Govt./Central Govt.

ELIGIBILITY : Research Associateships are intended to Research workers and teachers preferably below the age of 45 years (55 years in case of women candidates) who have obtained a doctorate degree, have published evidence of independent research work.

DURATION : The Associateships are awarded initially for a period of three years extendable for another term not exceeding two years on the basis of progress of work.

RESERVATION IN GENERAL CATEGORY : 10% Associateships in the General Category are reserved for SC/ST candidates provided they fulfil the minimum qualification laid down for the award.

SELECTION : The selection of Research Associates will be made on merit and on the recommendations of a Selection Committee appointed by the Commission for this purpose after interviewing the candidates. Candidates called for interview will be paid single second class rail fare each way by the shortest route. The decision of the Commission shall be final.

APPLICATION FOR AWARD : Application forms are obtainable upto 15-8-1987 from the office of the Secretary, University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-110002 free of cost or by making a written request to the Secretary, University Grants Commission enclosing a self addressed envelope of size 22 cms x 10 cms. The applications form complete in all respects alongwith necessary enclosures should reach the Secretary, University Grants Commission latest by 31-8-1987 through the University/Institution where the candidate desires to work.

SC/ST candidates should attach a caste certificate.

Disabled candidates should attach a Medical Certificate. davp 823 (8) 87

ASSOCIATION OF INDIAN UNIVERSITIES

AIU House, 16 Kotla Marg
New Delhi 110002

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UNIVERSITY NEWS

VOL. XXV AUGUST 3
No. 31 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor:
SUTINDER SINGH

The Call of the Himalayas

The Himalayas which have protected us from foreign intruders over the centuries and supply us with rivers, fruits and vegetables, timber and fuel wood, places of pilgrimage and centres of meditation are now under siege. Technological advances in the field of aviation and space travel have enabled man to fly over the Himalayas while development of transport has eroded into the quiet aloofness of the Himalayan centres of refuge and solitude. Pressure of population is having its toll on the Himalayan flora and fauna. The contractors and commercial predators have carried their axe far into the Himalayan ranges and threaten to denude them of their forest wealth. These are dangerous signals and call for reflection and action.

Out of this challenge has emerged the Chipko Movement led by Sundarlal Bahuguna and Chandi Prasad Bhatt who has won the Magsaysay award. The Ministry of Environment also has initiated researches into the eco-social systems of the various sectors of the Himalayas through the universities spanning the Himalayan ranges from Kashmir through Garhwal, Gurukula Kangri, Pantnagar, Itanagar, Shillong, Manipur. Such studies are bound to throw up useful material for policy formulation relating to ecological and socio-economic problems.

My recent odyssey along the Alaknanda to Gaurikund at the base of the Kedarnath (11,500 feet) and the Mandakini to Badrinath (10,500 feet) has confirmed me in the thought that the Himalayan Universities should come forward in a big way to study the problems confronting the Himalayas and therefore, the nation, indepth and formulate solutions and programmes of action for consideration and adoption by the Government and voluntary agencies. The universities could introduce courses in subjects like Tourism, Hoteliering, Guiding, Mountaineering, Transport, Forestry and Conservation, Geology and Mining, Archaeology, and Ayurvedic Pharmacology for the benefit of the local youth thereby providing them an opportunity to acquire the necessary skills to contribute in a fruitful way in the developing economy of this region. There is also need for indepth studies in the socio-political problems of the Himalayas. While healthy interest has been evoked in Afghanistan following the Russian adventure in that country, the intellectuals in India may be faulted for not giving sufficient attention to the sensitive Himalayas. Tibet served for many centuries as a buffer between China and India but Indian scholarship sadly neglected the study of this sensitive region over the years. Same may be said of Nepal and Bhutan. Similarly Kashmir, Himachal, Uttarakhand, Arunachal, Manipur, Nagaland, Tripura also have not been given the attention they deserve by the Indian scholars, so much so that generally we are inclined to treat them with unconcern. Vice-versa, the attitude of the intelligentsia is of sullen alienation in these states which is a very dangerous sign and must be taken note of by enlightened scholars and opinion makers. While the Government is engaged upon fighting its battle on the Mc-mahon line, there is no reason why the universities concerned should not take up the task to unravel the knotty question and provide feed-back on the basis of history, geography, economics and culture. In a democracy. it becomes the duty (Dharma) of every enlightened citizen to stand up and develop right policies for the guidance of the Government and the rulers. Here is a task that the Universities simply cannot afford to neglect.

—G. B. K. Hooja

Rural Development in India

L.D. Kataria*

Rural development as a consciously devised programme to improve conditions of the people in the countryside in developing countries is a post-war phenomenon. Though there exists wide variation in the use of the councept of rural developmen, it is generally viewed as a normative goal—a process aimed at improving the well being of rural people. According to Gunnar Myrdal, it embraces everything done to improve conditions in the villages, including the sponsoring of cooperatives; in a sense it encompasses all the policy efforts directed towards rural uplift. The accent of the programme remains on multipurpose approach, self help, people's participation and technical and material assistance.

India's rural development programme remains as one of the most gigantic and ambitious programmes in the world. It has passed through several critical stages and has been shaped by numerous earlier efforts. While sporadic efforts have been made by various well meaning rulers in different phases of Indian history, a conscious and organised awareness received focus only in the freedom struggle era when countryside was drawn into the movement. The period 1921-32 witnessed a series of experiments at rural reconstruction—important among these were: Rabindra Nath Tagore's Sriniketan; Dr. Spencer Hatch's Marthandam Project; F.L. Brayane's Gurgaon Experiment; V.T. Krishnamachari's Baroda Experiment and Gandhi's Sevagram Experiment[1]. Though these attempts were isolated and limited in scale mainly due to lack of support, financial as well as technical, they exhibited remarkable similarity in content and basic approach and were guided by deep moral and spiritual bases. In fact, pioneer's background determined the character of these experiments. For instance, Tagore provided a holistic approach to material and intellectual advancement. Dr. Hatch, who was an American Missionary, could establish close contacts with Y.M.C.A. in his efforts and provided an elaborate inventory of validated extension principles. Gandhi, who was a political agitator and great social reformer, used all his tools for his work which he wanted to use in fighting political battle. His stress on self-sufficiency, besides other important ideals, proved as the bedrock of Sorvodaya scheme by the Bombay State on one hand and produced strong commitments among political leadership to the cause of rural reconstruction on the other. Brayne, a Britisher and Collector of Gurgaon, used administrative authority to implement his multi-purpose programme and consequently, it met the fate of any officially sponsored programme. However, his experience demonstrated the need of multi-purpose functionary at the village level and comprehensive character of the programme. Mr. V.T. Krishnamachari, who was the Diwan of Baroda State and a keen student of Economics, used his academic and political background in implementing rural reconstruction programme in Baroda State. The experience showed that the success depended greatly on the cooperation of the villagers and village institutions and not on official agencies alone, and that the multi-purpose and integrated character of the programmme with development of agriculture is the key to rural uplift.

Of geat significance for the rural development has been the publication of the report of Royal Commission on Agriculture in India in 1928 which recognised that "Mere material improvement will not bring lasting benefits to the agricultural population.........The central problem is now psychological, not technical... The will to live better must furnish the driving power without which improvements in agriculture and commerce will not give an adequate return".[2] To stimulate the desire for better living, the Commission laid stress on adult education in wider sense, and the system of village "Guide" who when trained will be able to help villagers in cooperative action as also in improving their conditions. The Commission, however, did not provide any guideline about the elaborate set up of likely extension organisation to cover the whole country.

The post-war period till formal launching of community development programme in 1952 can be viewed as a period of probationary trials through which basic approach, administrative structure and programme contents for the nationwide rural development programmes could be discovered. First among these was the Firka by Development Scheme launched by the Madras Government in 1946 with the aim of achieving self sufficiency and multipurpose development with local initiative. The scheme was later merged with Community Development Programme and National Extension Service (N.E.S.) when the latter was adopted by the State in 1953-54.

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The Nilokheri and Faridabad Experiments initiated in 1947 clearly demonstrated that the people can be mobilised to build their own village with their own abour and that capital can be generated through ocal initiative and cooperative efforts. The Etawah Pilot Project started in 1948 by Mr. Albert Mayer in collaboration with the U.P. Government proved to be the forerunner of the first series of Community Projects started in 1952. The important lessons that this project offered for future were : that a single worker can be effective as 'generalist' if trained and provided access to technical experts; that self-help, integrated and demonstration approach would yield desired results in changing rural socio-economic life. Mayer also stressed on inter-departmental coordination, targetting and local leadership.

The desirability of setting up a National Extension Service received official recognition in the Report of Fiscal Commission and Grow More Food Enquiry Committee. The Fical Commission, while endorsing the views of Royal Commission on Agriculture, recommended the setting up of National Extension Service with the object of bridging up the gap between research and farmer's practices[3]. The Grow More Food Enquiry Committee Report which later formed the basis of present set up of extension services in India observed that "All aspects of Rural Life were inter-related" and that while particular problem might call for special attention, "The plans for them should form parts of and be integrated with those for achieving the wider aims[4].' The recommendations of this committee served as a base to a very large extent in shaping the extension approach which became an essential vehicle of the community development in India. It was felt that the central aim of community development was investment in man and integrated extension service should be the principal means to that end and that scientific knowledge and techniques should be carried to the people through the extension agency. The First Five Year Plan gave recognition to this new approach in the following words ;

"Community Development is the method and rural extension the agency through which the Five Year Plan seeks to initiate a process of transformation of the social and economic life of the villages".[5] The specific objectives of the programme were threefold :

(a) Area Development—with a minimum all round progress;

(b) Self-help programme—People's participation being the essential feature;

(c) Development of the whole community with special emphasis on the weaker and the underprivileged sections[6].

The nationowide programme of rural development was formally launched on October 2, 1952 in 55 community projects. With the acceptance of the block as a unit of planning and development, a schematic budget was made available for carrying out rural development programmes. The response of the project was so tremendous that from October 1953 a less intensive set-up of National Extension Service was introduced for the rapid coverage of the country with essential basic staff and Extension Services on a permanent footing. A standard staffing pattern was envisaged for each block though there existed some flexibility in this aspect depending upon the programme requirements, size of the block, nature of the schemes launched, etc. While Block Development Officer belongs to the State department concerned with Community Development/Rural Development/Panchayati Raj, the extension officers were drawn from respective subject-matter departments.

While the success stories began to pour in, doubts were expressed about the adequacy of methods used. An evaluation report observed : "An emphasis on organisational compliance and official responsibility move in threatening to turn a state-induced popular ment of rural regeneration into an official programme of tasks in which people are asked to participate". The administration was also criticised for lack of coordination with non-official organisations and slow progress in progressive delegation, implementation and planning to the people. In the Fifth Development Commissioners' Conference (May, 1956), the Administrator observed : "We cannot go far from where we have arrived unless we have wider partnership with technical departments, wider partnership with people's institutions and wider partnership with political institutions of the country"[7].

With repect to the community aspects of the programme, the Programme Evaluation Organisation asserted that every attempt should be made to utilise organised channels of the village community for the planning and implementation of development programmes rather than just stray individuals, however, progressive they might be. This means a more and deliberate and definitely greater use of the Panchayat and the Cooperative than has been done so far.[8]

Considering the above observations, the National Development Council appointed a Committee on Plan Projects (COPP), popularly known as Balwantrai Mehta Committee to study the working of Community Development and National Extension Service and make suitable recommendations. The findings of the committee were accepted by the National Development Council which marked the beginning of a new phase in the history of Rural Development—the phase of democratic decentralisation. The committee noted with concern that one of the least successful aspects of the Community Development and National Extension Service programme was its attempts to evoke popular initialtive. Towards this end, the committee proposed a three-tier system of a local self-government bodies upon which all development work within their jurisdiction should be devolved. This included Gram Panchayat at the village level, Panchayat samiti at the Block level and Zila Parishad at the district level, with representation of weaker sections and women. The committee recommended the block as a basic unit of democratic decentralisation, the Zila Parishad was assigned only an advisory role"[9].

The Balwantrai Mehta Committee Report was a landmark in the evolution of developmental administration in India. The Panchayati Raj represented a logical working out of certain assumptions inherent in the C.D. and NES programme as visualised by planners and national leaders. However, there exists great variation in the pattern of Panchayati Raj that emerged following Mehta Committee Report. While certain unevenness in the pattern of response is understandable in view of the size and the diversity of the country, one notices the contrast between a promising start and vicissitudes. The most disconcerting aspect has been the postponement of elections for a long period, frequent suppressions, suspension or abolition of Zila Parishads and other tiers of Panchayati Raj. It is interesting to note the general slackening of interest in rural development and its corresponding adverse effects on functioning of Panchayati Raj institutions.

At the time when rural development programme received a new life as a consequence of introduction of Panchayati Raj, counter trends were also discernible. There were parallel moves within the Government to shift away from community or area development approaches in favour of sectoral development with reduced emphasis on overall development of the community. The deepening food crisis made it necessary to lay greater stress on agricultural production. A more restricted developmental view of the development goals started to emerge. The fate of social education became uncertain. Per capita contribution of people in terms of cash, labour, etc. showed a declining trend. The relationship between officials and non-officials became strained. The morale of grassroot workers was adversely affected.

The decade commencing from Third Five Year Plan proved to be of great significance for rural development. The efforts made during this period had brought drastic changes in the character of the programme. Compelled by food shortage, intensive efforts were directed in the first instance to those areas which were best endowed for higher food production. This culminated in the adoption of the new strategy of agricultural development. The first stage in this direction was introduction of Intensive Agricultural District Programme (IADP) popularly known as "Package Programme" in 1960-61, with the main aim of demonstrating the potentiality of increased production through a multipronged, coordinated and concentrated approaches to boost agricultural production in area which could quickly respond to such efforts. Subsequently, a modified version of the same approach known as Intensive Agricultural Area Programme (IAAP) with emphasis on selected major food crops was introduced to cover more parts of the country. These efforts proved instrumental in promotion of intensive agriculture but operated within the limitations set by existing crop varieties which had low response to fertilizers and hence striking results could not be achieved. The introduction of High Yielding Varieties Programme (HYVP) in 1965-66 changed the agricultural scene. Among various crops taken up under this programme, striking results have been achieved in the production of wheat followed by paddy.

The mounting concern for the immediate gain in production and resultant change in strategy led to the virtual neglect of the popular participation and Panchayati Raj institutions. The Fourth Plan recognised that local finance continued to play little role in local development which means that development tempo was to be generated and sustained only with Governmental efforts and finance. The Fifth Plan, therefore, stipulated reorienting and strengthening of community development agency and Panchayati Raj institutions, but no concrete steps were initiated.

The change in political complexion following 1977 election provided a new thrust for rural development in the context of removal of poverty and renewed commitment to decentralisation. A high power Committee on Panchayati Raj institutions headed by Shri Ashoka Mehta was accordingly constituted in 1977 which submitted its report in 1978. In view of significant changes that occurred during previous two decades, the Committee suggested such a structure of Panchayati Raj institutions which is believed to be in conformity with these changes. The report was considered a landmark in the evolution of Panchayati Raj institutions. Accordingly, Zila Parishad would be made more powerful; the Block would cease to be the basic unit of devolution; Mandal Panchayat covering a population of 15,000-20,000 would become hub of development activities; and political parties would be allowed to participate in elections. A close fit between the growth centre approach and decentralisation of powers and functions at local levels remains an integral part of rural development.[10] However, the recommendations of the committee were not implemented.

During this period various evaluation studies revealed that the new agricultural strategy, though resulted in substantial increase in agricultural production and productivity, has resulted in its benefits mainly to already prosperous and well endowed areas and rich landed sections of the population and that the economic disparities between regions and groups have further widened. It was in this perspective that special deliberate efforts were initiated from Fourth Five Year Plan for the benefit of backward regions and weaker sections comprising scheduled castes and scheduled tribes, small and marginal farmers and agricultural labourers. These programmes were mainly of two types ; resource or problem-based area development programmes and target-group oriented programmes. While former category consisted of such programmes as Drought Prone Area Programme (DPAP), Desert Development Programme (DDP), Hill Area Development Programme (HADP) and Command Area Development Programme (CADP), the latter category included Small Farmers Development Agency and Marginal Farmers and Agricultural Labourers Development Agency (SFDA & MFAL) and Tribal Area Development Programme (TADP). These programmes were further strengthened in the Fifth Plan also.

The main purpose of these programmes was to improve living conditions of the rural poor particularly in backward regions and some success has been achieved in this direction. It was, however, realised that the magnitude and dimension of poverty is such that a for more ambitious and imaginative programme was required for the removal of the more degrading forms of rural poverty. The Sixth Plan took cognizance of the fact about half of the rural population is consistently living below the poverty line. A new programme, the Integrated Rural Development Programme (IRDP) was, therefore, launched in 1978-79 with the main objective of raising the income of the poorest families in rural areas above poverty line by giving them income-generating assets and access to credit and other inputs. All persons living below the poverty line (family of 5 persons with an annual income below Rs. 3500) were intended to be covered by the IRDP.

The introduction of IRDP was a major departure in emphasis, content and coverage of the rural development strategy. It was assumed that neither the project nor the sectoral approach is adequate for the overall development of the area and to the distribution of benefits to the people especially to those be-

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longing to weaker sections. The IRDP, therefore, envisaged an integration of methodology and approach of all the on-going special programmes, i.e. SFDA, DPAP, and CAD programme. Accordingly, all the principal components of these programmes have been incorporated in the new programme of IRD which combines both area development approach and target group approach. This was intended to intensify development efforts in special programme areas. The programme launched on the limited scale in 1978-79 was extended to all the Blocks in October, 1980.

The different programmes operating for the improvement of the conditions in rural areas may be broadly grouped into three categories :

1. Individual Household and Poverty Group Oriented Programmes for income generation such as Integrated Rural Development Programme (IRDP), Training of Rural Youth for Self Employment (TRYSEM), Development of Women and Children in Rural Areas (DWCRA), National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP).

2. Special Area Development Programmes to counter endemic poverty caused by hostile agro-climatic conditions which include Desert Development Programme (DDP), Drought Prone Area Programme (DPAP), Hill Area Development Programme (HADP) and Ravine Reclamation and Flood Control Programme.

3. Special Consumption and Social Service Support Programmes for the poor through Minimum Needs Programmes (MNP). This includes elementary education, rural health, water supply, rural roads, rural electrification, housing assistance to rural landless labourers, environmental improvement and nutrition.

Serious concern is being expressed about the persistent poverty despite various measures to alleviate it. In the period from 1960-61, to 1977-78, the rural poverty ratios have been fluctuating between 45 and 56 per cent and at no point of time could it be said that the development programmes made a discernible impact in these ratios. In 1980, population living below the poverty line was estimated to be 53 per cent. The IRDP, therefore, envisaged to bring down this percentage to less than 10 during a fifteen years span i.e. 1980-95.

In order to achieve the above goal, Sixth Plan provided t total allocation of Rs. 1500 crores and together with Rs. 3000 crores of Term Credit, the total investment was to the tune of Rs. 4500 crores. The achievements were reported to have exceeded the targets i.e. the total expenditure during 1980-85 worked out to be Rs. 1661.17 crores and the total Term Credit Rs. 3010.61 crores. Likewise, the actual number of beneficiaries covered exceeded the target i.e. 165.62 lacs total beneficiaries and 64.63 lacs scheduled castes/tribes beneficiaries as against respective targets of 150 and 45 lacs.[11]

A great emphasis was placed also on rural employment programmes like National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP) and hence shifting of resources from IRDP to these programmes was envisaged. This was guided by two considerations : (i) the type of household enterprises visualised are uneconomic and handicapped for want of adequate infrastructure; and (ii) due to illiteracy and poor economic position of most beneficiaries and presence of intermediaries, only a small portion of the outlay flows to the actual beneficiaries. The employment progammes were, therefore, strengthened as they offer secured wage-income to the poor through creation of durable community assets. Moreover, IRDP and these programmes are not mutually exclusive; rather they supplement one another and ensure stability in income.

Among the other poverty group-oriented progrmmes, important are : Training of Rural Youth for Self Employment (TRYSEM) and Development of Women and Children in Rural Areas (DWCRA). The TRYSEM as a National scheme was launched in 1979 with a necessity to equip rural youth in the 18-35 age group with necessary skill and technology to enable them to take up self employment projects. For this purpose rural youth are provided with cost of training, subsidy and credit facility, Development of Women and Children in Rural Areas (DWCRA) was launched in 1982 on pilot basis in 50 districts. The thrust of all these programmes is on the families below the poverty line and 30 per cent of the families so assisted belong to scheduled castes and scheduled tribes. During Sixth Plan 3,000 families were to be covered in each block.

The massive efforts particularly those launched in the Sixth Plan have brought down the percentage of people below the poverty line. This is evident from the fact that the poverty ratio which was estimated to be 51.2 per cent (254 million) in 32nd round of NSS (1977-78) dropped to 40.4 per cent (221.5 million) in the 38th round. During 1984-85, this is expected to be about 39.9 per cent (222.2 million).

The Seventh Plan provides a still larger allocation for rural development. Of the total allocation of Rs. 9074.22 crores for rural development, Rs. 3473.79 crores were earmarked for IRDP; Rs. 2487.87 crores for NREP and Rs. 1743.78 crores for RLEGP. The strategy has been also drastically changed in view of the deficiencies noticed in the functioning of the programme : a higher investment has been proposed to ensure proper return on investment; provision of supplementary dose of assistance for the earlier beneficiaries to enable them to cross poverty line; replacement of uniform approach to that of selectivity ; revision of poverty line to Rs. 6400; focus on poorest of the poor i.e. all families income below Rs. 4800 are to be identified but first those below Rs. 3500 are to be assisted; involvement of people's representatives/ voluntary agencies; and increasing the coverage of women beneficiaries to 30 per cent of the total.

While the programme has been recast in the Seventh Plan, its efficacy as an instrument to remove poverty has been debated. The evaluation studies conducted by RBI, NABARD, IFMR and PEO revealed that the programme had positive impact on the income of beneficiaries. The incremental income was reported by 51% sampled households in RBI study, 82% in NABARD study and 82% in PEO study. The corresponding proportions of the persons who had crossed poverty[12] line were found to be 17, 47 and 49.4 respectively. These evaluation studies have also brought to our notice several shortcomings :

1. There has been wrong identification of the beneficiaries to the extent of 15-20%. This was attributed to the reliance on the list of households identified under SFDA which was based on land-size rather than income; non-involvement of local people's institutions; alliance between development functionaries and vested interests and bankability of those having assets.

2. Corruption and malpractices due mainly to non-involvement and lack of awareness among the beneficiaries; insufficient investment and procedure of disbursement of subsidy.

3. Over-emphasis on animal husbandry schemes. Even this was vitiated by shortage of good breed of animals, artificial increase in cost of animals, lack of support services for feed, health cover and marketing.

4. An against 33% of beneficiaries from tertiary sectors as stipulated, the actual beneficiaries were far less in number particularly in the initial years.

5. Inadequate staff at the district level and absence of field staff at the block level to carry out the programme.

6. Inadequate infrastructure facilities and linkages due to which viable schemes could not be formulated and implemented. The problems in raw material supply, marketing facilities, etc. resulted in exploitation by middlemen.

7. Contrary to the RBI guidelines, insistence on security/collateral by banks resulted in the exclusion of poorest section, delay in disposal of loan applications, under-financing by banks and short payment period making the project non-viable.

8. Irregularities in supply and maintenance of assets.

9. Inadequate training facilities for district and block level functionaries.

10. Differential impact of IRDP on developed and less developed regions in favour of the former.

11. Uniform basis of financial allocations and physical targets without regard to the incidence of poverty, and population size local resources, etc.

Several independent studies have also been conducted to assess the impact of poverty alleviation programmes[13, 14]. These have brought out several shortcomings; (1) the people were not involved in the governance of development plans and measures; (2) the administration has aligned itself with the powerful rural rich, thereby accentuating existing socio-economic inequalities; (3) the whole development burden rests with the administration which is not able to relate to the local population and possibilities; (4) neglect of local resources, needs and possibilities; (5) implementation of plans in isolation of the block plans; (6) lack of coordinated approach and defective organizational planning; (7) diversion of funds to meet establishment cost; (8) absence of relationship between expenditure and physical targets; and (9) lack of adequate institutional arrangements and field staff at the block level.

In contrast to the above, the study conducted by Haryana Agricultural University, Hisar, in three districts of Sirsa, Karnal and Jind revealed that highest amount of subsidy was received by the poorest among the poor; that Animal Husbandry and Agriculture accounted for the major share in the total subsidy provided to the rural poor with little assistance for industrial programmes; that misidentification ranged from 9 to 20 per cent—that 11 to 28 per cent eligible beneficiaries were left unidentified; that the bulk of beneficiaries under different schemes belong to the categories of marginal farmers and landless agricultural labourers; that medium and large farmers also took advantages of these anti-poverty programmes particularly those related to farm forestry, camel-cart and camels, that the lack of awareness accounted for the non-participation of the rural poor; that the income increased from 22 to 39 per cent as a result of IRDP programmes; and that 32 to 40 per cent crossed the poverty line[15].

The success of poverty alleviation programmes, as reported by officially sponsored studies, was questioned by many scholars[16]. They have noted that only about 10 to 20 per cent of the total beneficiaries covered during the Sixth Plan could cross the povertty line; that there exists inconsistencies in the findings of the Programme Evaluation Organisation regarding increase in income and assets and the proportion of beneficiaries that could cross the poverty line; that income-increase reported by the official studies may be due to earlier trend arising from green revolution and not entirely due to anti-poverty programmes, and that IRDP succeeds more in agriculturally developed regions than in backward ones with poor infrastructural facilities implying thereby that massive investment in backward regions will go waste.

The disagreement about impact of rural development programmes is likely to continue but the fact remains that these have made some dent on poverty ratio and that with suitable changes in the strategy, the programme may be made more effective and viable. In this connection, certain points deserve attention : The Plan has admitted that unless social transformation takes place, these programmes cannot be successful. In this regard the plan has mentioned land reforms, education, extension, reorganisation of institutions, etc. But such rhetorics have been made earlier also without any effective implementation.

The mechanism required for the integration of IRDP and overall sectoral plans is needed to be spelt out and system approach need to be adopted. It has been suggested that projects with highest backward and forward linkages will be taken up under IRDP. But identification of such projects will require considerable amount of study. In the absence of this, discretion will continue with the officials to select projects of their own bias. The role of district level planning has not caught up because of many factors such as lack of expertise in planning at district level and absence of infrastructure such as computerisation, etc. Due to rampant corruption of benefits to genuine section has been low both qualitatively and quantitatively. A suitable mechanism and an appropriate remedy needs to be worked out. The concrete measures for effective coordination among the various institutions associated with IRDP are also required to be identified and reinforced.

For anti-poverty programmes to yield desired results, the whole strategy and approach need to be streamlined. The State intervention is not likely to achieve much success if it is not accompanied by mobilisation of poor through their own organisation. The problem is far more complex than simply identifying the poorest of the poor and distributing cash or assets. What is needed is to base the programme on the local resources, needs and existing state of skill development. There is an urgent need to make the poor aware of his constraints and potentialities and to provide him necessary skill to undertake suitable projects. While financial and material support is prerequisite, it is not sufficient. The effective system of follow up and marketing of products is required to be evolved. For this purpose systematic linkages between group of beneficiaries, administration, industries and markets have to be established. The State agency and the development administration have to play a major role in establishing and sustaining such linkages. This will require a detailed survey of local resources, existing skill and commercial possibilities of each region, district and block. The problem is colossal and fast rate of increase in population, particularly of poorer section, would require massive investment. The bureaucratic set up also needs to be made more sensitive and committed towards poverty-alleviation programmes and this calls for providing adequate incentives.

Above all, what is needed is a strong political will to improve the conditions of the poor and direct involvement of beneficiaries and local and voluntary organisations in addition to fuller involvement and participation of Local Self governing bodies like Panchayati Raj organisation, cooperative institutions and Municipal administration.

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(2) To promote and facilitate equality of opportunity for higher education for all sections of the population including those in employment, women (including housewives) and adults who wish to improve or enlarge their present knowledge in various fields;

(3) To offer to all such people the benefits of learning through correspondence courses, contact programmes, study centres, mass media and other devices using modern educational technology ; and

(4) to organise and conduct courses of study which would promote advancement and dissemination of knowledge and thereby meet the trained manpower needs of the States and thus help create an educated egalitarian society.

Characteristics

The Open University is not just another University. It is different from the existing universities in that

(i) it has greater freedom and flexibility built into various levels of its system,

(ii) it uses multi-media channels of instruction based on modern educational technology,

(iii) unlike the conventional university which is institution-oriented, it is institution-free and is student-oriented; and

(iv) by its instructional strategy plays an effective role in the important area of the formation of character.

Advantages

There are definite advantages in establishing an Open University in the State for it can

(i) accommodate the growing demand for higher education,

(ii) take care of all private candidates, and thereby reduce the load of the examination wings of the existing universities,

(iii) wean away students from 'Parallel Colleges' and Tutorial Institutions.

(iv) provide opportunities for higher education to all sections of people,

(v) take over the Correspondence courses and impart a complete system of distance education through multi-media channels,

(vi) provide courses which the students actually need,

(vii) give the much needed vocational bend to higher education,

(viii) create facilities for continuing education,

(ix) develop a cost-effective system that reduces the financial burden of the State, and

(x) offer an educational system that encourages initiative, independence and hard work, thereby turning out students who would be responsible, self-reliant citizens of the State.

Course Design

The courses of the Open University are designed under two main considerations—social relevance and advancement of knowledge. There are three main categories :

(a) Continuing and Extension Education Programmes;

(b) Undergraduate and graduate programmes; and

(c) Postgraduate programmes and research.

The courses may be long or short. The degree programmes, for example, will consist of a General Foundation Courses and Language done in the first year, Core Course on the basics of the subject in the second year and Applied or Specialisation course in the third year. The assessment will be based on the credit system. The courses would be prepared by subject matter specialists, educational technologists and media men, like production staff from Doordarshan, AIR, etc.

Entrance Requirements

The age limit for admission to all courses except for the Pre-Degree level will be 21. Those who have no previous academic qualifications can join the University by doing the preparatory course and passing the Ability Test. Others who have the requisite qualifications can register for the Foundation Courses and work towards diploma or degree.

Delivery System

The instructional strategy of the Open University is based on the principles and practice of distance teaching and will be geared to the special requirements of various courses. Instead of the conventional institution based face-to-face teaching practice of the existing universities, the Open University will use a multi-media delivery system which will consist of

(a) Use of Printed materials,

(b) Use of TV and Radio Broadcast,

(c) Audio-Video Cassettes, etc.,

(d) Computer Instruction,

(e) Tuition through Telephone,

(f) Laboratory Practical and Home Experiments Kits in Science and Technology Subjects,

(g) Contact classes at Study Centres,

(h) Counselling and Tutorial system, and

(i) Summer Schools at Study Centres.

Recent Studies made about instructional strategy have shown that the sanctity attached to face-to-face instruction is based on a misconception and that distance education through modern multi-media channels can be as effective and even more interesting than the conventional classroom lecture and notes instruction.

Finances

It is expected that the Open Uuiversity, unlike the existing universities, will not be plagued by the lack of financial resources. Once the set-up is laid out and the material prepared, the University should be almost self-supporting; Recurring cost will be low. Even the initial expenditure is not likely to be a problem, as the State and Central Governments would be making substantial grants to the State Open Universities.

Programmes

Courses Proposed to be started in

Phase-I

1. Courses in Computer Applications (Diploma, Bachelor's Degree and Master's Degree—DCA, BCA and MCA)
2. Bachelor of Public Administration (BPA)
3. Courses in Information Science (Bachelor of Library and Information System Management and Master's Programme in Informatics).
4. M.A. in Mass Communication
5. Educational Technology

(a) Master's Degree in Educational Technology including Television and Materials Production.

(b) M.H. Ed. (Master of Higher Education)

6. M.B.A. (Master of Business Administration) nd the Foundation courses for those without a degree.

Subsequent Phases

7. M. Phil in different disciplines
8. M. Phil in Research Methodology
9. M. Ed. in Educational Management
10. M.A. in Educational Planning
11. M. Ed. in Curriculum Planning
12. M.A. in Applied Linguistics
13. M.S. in Applied Mathematics
14. M.A. in Office Management
15. M.A. in Industrial Administration
16. M. Tech. in Material Science
17. M. Ed. in Childhood Education
18. M.A. in Spoken & Correspondence English
19. M. Tech. in Medical Technology
20. M. Tech. in Forest Management
21. M. Tech. in Fisheries
22. M.A. in Counselling and Guidance
23. Courses in Indian and European Languages
24. Diploma in Medical Diagnostic Testing
25. Diploma in Sanitary Engineering
26. Diploma in Horticulture

Mukta Viswa Vidyalaya

The rationale and philosophy of the Open University rest on two very important considerations: One, to make higher education available to the masses, bring it to the doorsteps of all those belonging to the backward and weaker sections of society, provide educational opportunities to those students who could not find a place in institutions of higher learning due to impoverished socio-economic conditions and other limitations and ultimately to facilitate and promote equality of opportunity for higher education for a large section of the community including those in the field of work and women including house wives, and jobbers who wish to update and upgrade their knowledge in various fields. Two, to liberate and perhaps redeem higher education from the rigid academic and administrative structure. The English expression Open University is something of a misnomer, because the word Open does not really bring out the full-connotation and significance of the concept as such. In fact a better expression would be the Sanskrit term MUKTA VISWA VIDYALAYA, the nearest English equivalent being liberated, redeemed higher education. It is in this context and meaning that the new challenges in higher education are met through this new institution known as OPEN UNIVERSITY. ☐

INSTITUTE OF CORRESPONDENCE EDUCATION

(University of Jammu)

ADMISSION NOTICE

Applications are invited for admission to the following courses (session 1987-88) through Correspondence :

1. M. Com. Two years course; 2. LL.B (Academic) Two years course; 3. Certificate Course in Urdu through Hindi medium; 4. English Improvement Certificate Course.

The prospectus-cum-application forms containing full information with regard to enrolment, eligibility conditions, details of fee etc., can be obtained on all working days from 8.00 a.m. to 1.30 p.m. from the office of the Institute of Correspondence Education, University of Jammu, Jammu. The price of Prospectus of each course is as under :-

Name of the Course	At the Counter	By Post
1. M. Com. Two years	Rs. 8/-	Rs. 10/-
2. LL.B. (Academic) Two years	Rs. 8/-	Rs. 10/-
3. Certificate Course in Urdu through Hindi medium.	Rs. 6/-	Rs. 8/-
4. English Improvement Certificate Course.	Rs. 6/-	Rs. 8/-

In case the Prospectus is required by post the amount should be remitted through Crossed Bank Draft/Postal Orders drawn in favour of the Director, Institute of Correspondence Education, University of Jammu, Jammu. Money order, postal stamps and cheques will not be accepted.

Last date for admission without late fee is **31st of August**, 1987 for all courses.

Dr. Santokh Ram
DIRECTOR

Telephone : 46369

Note :

1. The University of Jammu has not authorised any educational organisation, either recognised or unrecognised to make enrolment on behalf of the University for any course conducted by the Institute of Correspondence Education, University of Jammu.
2. Candidates already undergoing any University course are not eligible for admission to the Course.

The United States Educational Foundation in India

"Fulbright House", 12 Hailey Road, New Delhi-110001

1987-88 POST-DOCTORAL TRAVEL-ONLY GRANTS

Applications are invited for a limited number of Travel-only grants to the United States from Indian scholars who have research or teaching assignments in the United States **beginning January 1988 or later**. Only those with programs for a minimum period of **three months** will be considered.

Candidates must :

(1) have a Ph.D. degree or equivalent published work
(2) be Indian citizens and be present in India on the closing date of the competition
(3) be proficient in English
(4) be in good health
(5) not have been in the U.S. during the last four years to teach or do research
(6) be accepted by a recognised U.S. University or research institution for post-doctoral research and/or as a visiting lecturer and must have assurance of dollar finance to cover their expenses in the U.S. for the duration of the assignment. The letter of acceptance must show the nature and duration of the assignment, and must be accompanied by evidence of dollar support at the rate of not less than $ 9,000 and not more than $20,000 per academic year. The evidence of dollar support could be in the form of a grant or fellowship offered by American universities or research institutions or by Indian universities or research institutions.

The grant will provide round-trip economy class air travel, by the most direct route, from the candidate's ordinary place of residence or his academic institution to his U.S. institution and back. Excursion fare tickets valid for 120 days will be provided for those with programs of less than four months duration in the U.S. Travel will be arranged by the Foundation and grantees must travel on U.S. visas issued against the IAP-66 provided by the Foundation and must conform to rules and regulations of the the U.S. Government applicable to all exchange-visitor visa holders.

How to Apply

Eligible applicants must complete and forward two copies of the prescribed application through the administrative head of their institution so as to reach the Foundation no later than **October 15, 1987**, together with a copy of the letter of acceptance from the U.S. institution. The original application, along with enclosures, should be sent to the Director, U.S.E.F.I., "Fulbright House", 12 Hailey Road, New Delhi 110001. The second copy should be sent to the Regional Office of the U.S.E.F.I. (addresses given below) nearest to the applicant's place of residence except in the case of those resident in Rajasthan, Delhi, Haryana, Punjab, Himachal Pradesh, Jammu & Kashmir and Uttar Pradesh. Candidates residing in these States should send both the copies to New Delhi.

(1) The Regional Officer,
U.S.E.F.I.,
"Sundeep", 4 New Marine Lines,
Bombay 400 020.
(2) The Regional Officer,
U.S.E.F.I.,
8 Short Street,
Calcutta 700017.
(3) The Regional Officer,
U.S.E.F.I.,
American Consulate Building,
Mount Road,
Madras 600006.

Incomplete applications which are not forwarded through the administrative head of the Institution will not be considered.

Government officials should send a copy of their application through proper channel to Secretary, (University & Higher Education), Ministry of Human Resource Development, Department of Education, Shastri Bhavan, New Delhi 110001. The second copy could be sent directly to the U.S.E.F.I., 12 Hailey Road, New Delhi 110 001, as an advance copy. Consideration will, however, be given only if the application through the Government reaches the Foundation in time.

N.B. The application form will be reproduced by a photographic process. Therefore, please use typewriter with a clean, fresh black ribbon. If typewriter is not available, please write out your answers clearly and legibly in **black ink** preferably in **block** letters.

Convocation

Towards Equal Status

Hon'ble Mr. C. Ponnaiyan, Minister for Law and Education, Tamil Nadu Government, delivered the Convocation Address at the First Convocation of Mother Teresa Women's University, an institution the Government of Tamil Nadu established to achieve the goal spelt out by Poet Bharathi, Equal Status for Women. Stressing the importance of women's education, Mr. Ponnaiyan observed "what is wanted is not merely imparting education to women but by this process to build up a positive image and to impose self-confidence among women, thereby developing the sense of equality". Excerpts:

The motto of this University is "Towards equal status". This is not like any other conventional type of University but intended to do research and the outcome or findings of such research being directed towards the cherished goal of development of Women. I remember in this connection what Mahatma Gandhiji told, "You educate a man, thereby you educate an individual; But when you educate a woman, then you educate a family". Similarly when conventional Universities produce a Ph.D./M.Phil Scholar, they produce an eminent individual scholar; but when this Women's University produce a Ph. D. Scholar, her contribution by way of research helps in the Socio-economic development of the entire community of Women. I am telling this, to impress on the scholars that their study is so directed not only to improve upon themselves but also to serve for the cause of Women's Welfare.

As per the objectives of the University it does not stop with selling the research findings as to how and what should be done for Women's Development. The University is expected to monitor the progress of schemes implemented for the development of women and to indicate the deficiencies, suggesting as to how they could be remedied and made good.

As per our National Education Policy, education becomes a strategy for achieving a basic change in the status of women. What is wanting is not merely imparting education to women but by this process to build up a positive image and to Impose self confidence among women, thereby developing the sense of equality. If this is achieved women will enjoy a sense of participation in all spheres including national planning and development.

Mere acquisition of educational qualification will not make women confident of their place in society. Change in attitude is needed much.

Women's organisations all over the country are trying to do something towards the cause of liberation to women, abolition of dowry system, etc. If their efforts are to yield good results, it cannot be through enactment of Laws. The attitude of women in general and towards women in particular should change. What is required for this purpose is that women should be educated at all levels and as already pointed out they should be taught to be self dependent.

The University should be able to play a positive role by studying the condition of women in different areas and suggest life oriented and utility oriented education to be imparted to women at all levels—Children, young and old women so that the entire community is benefited. If this scheme is implemented with good rapport in the society, we can be proud that we have made a good start towards attaining the goal of Equal status.

Another point that I would like to stress is the heavy waste of potentials among women both in rural and urban areas. I do not know why many educated ladies, for various reasons resign in life as mere housewives, leading to unutilisation of precious women power. It does not mean that every educated woman should necessarily go in for jobs. But my intention is that the talents they have acquired should not be allowed to go waste. This University should utilise their potentials usefully and make the community to be benefited, of course without disturbing their family life.

I can say with all firmness that a duty is warranted of these educated women to associate themselves in the welfare of women's community. If the talents they have acquired at heavy cost, are not to be utilised, it would amount to enormous National waste. A systematic way of utilising their services could be devised by Mother Teresa Women's University. □

Voluntary Bodies and the New Education Policy

The task of transforming the policy into a people's education movement had to be shouldered by the voluntary agencies at the grass-root level said Prof. Ramlal Parikh, Vice-Chancellor of the Gujarat Vidyapith while speaking at a seminar on the "Role of Voluntary Agencies and the New Education Policy," He said the massive illiteracy prevalent in the country had to be wiped out from every village by the formation of grass-root institutions rather than by the likes of the 'Central Institution for Scientific Education', as well as by focussing on non-formal education geared towards self-reliance.

The role of these organisations, he said, should start at the balwadis level with three-year-olds, because though in the last four decades, education had expanded 18 times, not even three per cent of the age-group which should be enrolled in schools and colleges had been tapped. Access to education was limited to a few from the privileged class, while vast members were destined to go without education. The high rate of population growth was the biggest obstacle to the realisation of education for all by 2000 A.D. He was of the view that education, to serve its proper function, must move from being a status symbol to a symbol of learning.

Aquatic Biology Centre

The first aquatic biology and fisheries research centre in western India is being set up at the South Gujarat University campus at Surat. The University Grants Commission (UGC) has approved the plan and has sanctioned a special grant of Rs. 15 lakhs for the purpose.

The centre will function as a part of the bioscience department of the university. It will be made an autonomous institution later. It will also conduct a post-graduate course in aquatic biology.

The idea of introducing an aquatic biology research centre was evolved in view of the long coastal belt. its tremendous marine wealth and the increasing pollution of oceans and rivers coupled with the absence, till today, of an educational institution and research centre in western India on aquatic biology.

The new centre will have polythene boats and mobile laboratories to conduct deep sea research. Prof. Regothaman, presently undergoing advanced studies in the subject in Hungary, is expected to return in January to guide the centre. The university also has plans to recruit a few experts for the centre.

Nagarjuna Varsity Documentation Centre

Mr. K. Ramakrishnarao, Vice-Chancellor, Andhra University and Chairman Andhra Pradesh Commissionerate of Higher Education laid the foundation stone for Documentation Centre of Nagarjuna University, recently. Speaking on the occasion Prof. Ramarkrishnarao congratulated the authorities in establishing the documentation centre. He expressed hope that the centre would soon acquire all equipment for storing and the retrieval of information largely through the media of latest technology.

He said that no institution of higher learning committed to excellence in research would hope to be in the forefront in frontiers of knowledge unless it had the capability to make available to researchers the latest advances in the field of knowledge. The documentation centre that was being now established would serve the purpose and be a model for other universities to emulate, he added.

Prof. G.J.V. Jagannadha Raju Vice-Chancellor, Nagarjuna University, who presided, said that the documentation centre included information storage and retrieval. A computer centre is also planned along with this.

Tripura University

The Tripura University is expected to start functioning from this year. All degree colleges hitherto affiliated to the Calcutta University would come under the jurisdiction of this newly established university.

M. Phil through Correspondence

The Syndicate of the Punjabi University is reported to have approved the proposal to start M.Phil Courses in Political Science and Economics through Correpondence from the current academic session. M Phil Course in Geography will also be started on the university campus from this session. The University is also reported to have decided that the admission to the Diploma Course in Pharmacy at various degree colleges will be held through an entrance test on the pattern of P.M.T.

Kuvempu University

The Karnataka Government proposes to set up the Kuvempa University in Shimoga district. The Governor is reported to have given his assent to the Karnataka State Universities (Amendment) Bill 1986 which provides for the establishment of this University.

National Encyclopaedia Centre

The National Encyclopaedia Centre (NEC), the first of its kind in the country, has been set up at Cuttack by the "Jnanmandal Foundation" headed by veteran freedom fighter and journalist, Binod Kanungo, who has single handedly published 40 volumes of the "Jnanmandal" Oriya encyclopaedia so far. Thirtyfive more volumes of the encyclopaedia are expected to be published by 1990.

Inaugurating the Centre, the State Chief Minister, Shri J.B. Patnaik, assured all help and cooperation to the "Jnanmandal" for publishing the remaining 35 volumes of the encyclopaedia in 1,000 days. Describing Mr. Kanungo as a "walking encyclopaedia", the Chief Minister also pledged support to the Centre for translation of the volumes already compiled into different Indian languages.

Speaking at the inauguration ceremoney of the Centre, Mr Kanungo, who was awarded the Padmashri last year for his achievements in the "encyclopaedia movement", said that the Jnanmandal Foundation had built up a Rs. 12 lakh reference Centre with over 25,000 files storing valuable information on all branches of human knowledge which were being constantly collected and updated.

The NEC would try to coordinate the efforts of various forums compiling encyclopaedias in the country, while endeavouring to provide momentum to the encyclopaedia movement and create awareness for such publications. It would perform several important functions aiming to reduce time and expense for the individual encyclopaedic offices by maintaining reference files and supplying requisite information. It would also build up information and picture banks while performing and maintaining contacts with foreign encyclopaedia centres and assisting in procuring permission to reproduce pictures and charts in foreign encyclopaedias.

The Centre, besides establishing a reference liberary, would also form a panel of translators to translate an English language article into a specified regional language.

The Centre would be shifted to Bhubaneswar when the proposed complex gets ready.

700-Acre Site for Central University in Assam

A Central University for North Assam is proposed to be set up soon. According to State Education Minister, Mr. Brindaban Goswami, a 700-acre site has been selected on the eastern outskirts of Tezpur and the construction work is expected to start this autumn. The University will have ideal surroundings with the Usha-Aniruddha Green Park on the West, Brahmaputra river on the South, the Rs. 90-crore Kaliabhomorasetu and Bhomoraguri Hills on the east and suburban Tezpur on the north.

Mosquito Library

The Department of Biotechnology of the Poona University proposes to develop a Mosquito gene library to find a gene which might help in the control of mosquito menace. According to coordinator of the department, Dr. Modak, the mosquitoes have now become immune to a large number of pesticides and the idea is to find and isolate the gene that have developed immunity to pesticides. By doing so, he feels, it might be possible to develop a new pesticide to attack the mosquito.

Hydrology Centre for Guwahati

The Union Government is reported to have agreed to set up a regional centre of the National Institute of Hydrology for the North-Eastern region at Guwahati. This was revealed by the State Irrigation Minister, Mr. Pabindra Deka recently. He said that the Director of the Institute would visit Guwahati shortly to discuss with the State Government the modalities for setting up the Centre.

New PG Diploma Courses

The Delhi University proposes to introduce postgraduate diplomas in the four restructured courses. The courses are Industrial Chemistry, Analytical Chemistry, Agro-Chemicals, and Environmental Sciences. In these courses the university will also impart six months industrial training during the three-year degree course.

UGC Grant for Libraries

The University Grants Commission (UGC) is reported to have decided to release a grant of Rs. 40 crore to libraries of the universities and colleges all over the country during the Seventh Five Year Plan. Of this 20 per cent of the grant would be utilised for the purchase of books and journals.

News from Agril. Varsities

Modernise Agricultural Education

The experts in planning and management of agricultural education in the Asian Agricultural Universities are of the opinion that there is a need of closer regional cooperation and exchange of experience and information at institutional level among the scientists, planners and administrators of this region. This was revealed by Shri L.D. Kataria, Vice-Chancellor, Haryana Agricultural University (HAU) after attending a 5-day regional seminar on the Improvement of the Quality of Agricultural Education in Asian region held in Bangkok (Thailand) from 6-10 July, 1987. The seminar was organised byKASETSART University of Thailand & UNESCO.

Mr. Kataria, who represented India, submitted the country report on agricultural education in India, with Special reference to HAU. In his country-report on India, Mr. Kataria emphasised the need for "modernisation and excellence" in agriculture. He said agricultural education in India had delivered the goods on the food front and brought the country not only to the level of self sufficiency but to a surplus state. With growing population, however, the agricultural education had to modernise itself for fulfilling future expectations and rising needs.

Amongst the other matters that engaged the attentions of experts at the seminar were result-oriented education, expansion of extension services, improvement in syllabus and identification of good universities in the region.

Besides Thailand, India, China, Korea, Indonesia, Bangladesh, Vietnam and Nepal participated in the seminar.

Summer Institute in Agricultural Biochemistry

A 10-day Summer Institute in Modern Analytical Techniques in Agricultural Biochemistry, sponsored by the Indian Council of Agricultural Research (ICAR), was held at the Punjab Agricultural University (PAU). Dr. Sukhdev Singh, Vice-Chancellor of the PAU who inaugurated the Summer Institute said that sophisticated equipment used for research purposes should be handled carefully and maintained properly. The Vice-Chancellor advised the scientists to use indigenous equipment which would help improve their quality.

Presiding over the concluding function, Dr. K.S. Gill, Director of Extension Education, said that during the recent years, there had been tremendous advancement in the analytical techniques used extensively in agricultural research. He appreciated the faculty of the Biochemistry Department for organising such a useful programme and hoped that the training imparted to the participants would greatly benefit them in research at their respective places of working. He also awarded certificates to the participants.

Ten participants from Punjab, Chandigarh, Haryana, Himachal Pradesh, Gujarat, Rajasthan and Jammu & Kashmir attended the Summer Institute.

Workshop on 'Permaculture'

A workshop on "permaculture" (permanent agriculture) was recently organised in Hyderabad by the Deccan Development Society in collaboration with the University of Hyderabad. Inaugurating the workshop, Mr. Mollison, Director of Permaculture Institute, Australia, said that permaculture was evolved to design an agricultural system which would not only be self sustaining, but also would work with the nature. He said about 2000 graduates were currently working in permaculture projects all over the world with a fair amount of success. He pointed out that, permaculture was an integrated design comprising agriculture, forestry, architecture and ecology.

Dr. Bh. Krishna Murthy, Vice-Chancellor of University of Hyderabad in his presidential address said that excess and unrestrained utilisation of natural resources had brought about large scale depletion of the same. He called upon the participants to evolve programmes to increase productivity in the agrarian sector.

Mr. N.P. Sen, member of permaculture sub-committee of Deccan Development Society said that the new agricultural systems currently being followed in the country would push the marginal and small farmers out of agriculture, as it needed heavy investment. He said the permaculture offered the only solution to meet the needs of the future generations.

About 40 delegates from voluntary agencies in India and Nepal participated in the two-week workshop.

Combating Environmental Pollution

The Indian Council of Agricultural Research (ICAR) has sanctioned a project worth Rs. 3.67

lakhs in the area of Environmental Pollution Control to Dr. S.S. Marwaha, Assistant Professor in the Department of Microbiology of the Punjab Agricultural University for carrying out research on the "Recycling of Effluents of Agro-based Industries".

The project is aimed to develop a low cost fermentation technology for the treatment of waste waters/effluents of the agro-based industries for their safe disposal. Moreover, it is aimed to upgrade these waste waters for their re-use/recycling and subsequently diluting the environmental pollution problem caused by the rapid increase in the number of agro-based industrial units in Punjab.

New Soyabean Variety

The G.B. Pant University of Agriculture and Technology has developed a new variety of Soyabean, PK-472. The new variety contains 40 per cent protein content and matures in about 100 days. It gives an average yield of 20 to 30 quintals per hectare.

Agri-Electronics Centre

A pilot centre to promote agri-electronics is proposed to be set up at the G.B. Pant University of Agriculture and Technology, Pantnagar at an estimated cost of Rs. 48 lakhs. The Department of Electronics, Govt. of India, is reported to have agreed to provide funds for this five-year project.

High Altitude Cold Desert Centre

The Indian Council of Agricultural Research (ICAR) will set up a research centre in the high altitude cold desert in Himachal Pradesh. This was hinted at by Mr. Sukh Ram, Union Minister of State for Planning during his recent visit to Shimla. He said that the Centre would provide assistance of Rs. 4 crore per district for the purpose.

The ICAR experts' team is expected to visit Mongolia shortly to acquaint themselves with the latest desert development techniques in similar conditions.

News from Abroad

Micro-Wave Communications Link Developed

Scientists at the University of Queensland have developed a miniature micro-wave communications link that has overcome one of the main obstacles to shrinking the size of communication devices, including cameras. The device, called Nano-Link by its creators, could be combined with micro-cameras now available to make a camera unit small enough to be carried by a bird or mounted on a helmet.

The scientists, from the University's Microwave Technology Development Centre, have also developed a microwave receiver that can fit into the palm of a hand. The complete system is capable of carrying a television chanel in all weathers up to 1.5 km. (just under one mile).

The head of the Centre, Professor Morris Gunn, said the system could be used to transmit and receive television, radio, computer and other electronic signals and was particularly suitable for the final connection in a satellite circuit. Tests conducted in Canberra had shown the system had a number of advantages over land lines, including its size and portability, and the fact that it could operate over line-of-sight paths and carry a wide range of signals, he said.

Recent Publications

1. Monograph on Sample Free Item Analysis	:	Rs. 50.00
2. Bibliography of Doctoral Dissertations in Social Sciences & Humanities 1983-84	:	Rs. 180.00
3. Educational Statistics at a Glance	:	Rs. 75.00
4. Education and Economic Development	:	Rs. 25.00

Address Enquiries to :

Under Secretary (Publications)
ASSOCIATON OF INDIAN UNIVERSITIES
AIU House, 16 Kotla Marg,
New Delhi-110002

Telephones : 3310059, 3312305, 3312429 and 3313390
Telex : 31 5578 AIU IN *Gram* : ASINDU

News from UGC

INSAT-1B Programme of UGC

Between 3rd to 20th August, 1987 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV Network throughout the country. For the viewers in Delhi and surrounding areas these programmes can be seen on the second channel.

3.8.87

"Tandem Electrostatic Accelerator I"
"Light In Search Of A Model"
"Computer Application"

4.8.87

"Economics Today-The Search For Tommorow's World"
"Skin Grafting"
"Regional Economic Development Through SAARC"

5.8.87

"Techniques In Genetic Engineering Microdissection & Microcloning"
"Anaesthesia"
"Indian Childhood Cirrhosis"

6.8.87

No Telecast

7.8.87

"A Prophet of The Space Age II"
"Vega is Flying to the Past"
"University Round-Up"

8.8.87

No Telecast

9.8.87

No Telecast

10.8.87

"Pelletron-Assembly of Different Parts"
"Measuring Electrons & Atoms"
"Metel Memory"

11.8.87

"Economics Today : The State of World fisheries"
"Global Economics Situation : Prospects for India"

12.8.87

"Out of the Past I"
"Environment Shapes/National Culture-Biogas I"
"Harvesting the Sea"

13.8,87

"A for Antarctica"
"Into the Earth"
"A Change"

14.8.87

"The Energy of Lunar Turbines"
"Time without End I"
"The Age of Man in Space"

15.8.87

No Telecast

16.8.87

No Telecast

17.8.87

"Flow of Physical Quantities Chemical Bonding',
"Programme on Super Conductivity"

18.8.87

"Economics Today, The Expensive Search for Raw Material"
"Economic Growth in India"
"Mobile Creches"

19.8.87

"Out of the past II"
"Environment Shapes, National Culture Biogas II"
"Animal in the Camera Lens : Reindeer"

20.8.87

"Rods and Magnets"
"Monsoon Circulation in India"
"Geography of S. America"

Shortly Releasing

1. Handbook of Medical Education-1987
2. New Technologies in Higher Education
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INTER-UNIVERSITY TOURNAMENTS

RESULTS

I. GAMES PLAYED ON ALL INDIA BASIS

S. No.	Games	Venue (Org. Univ.)	Winner Univ.	Runners up Univ.	Winner of 3rd Place	Winner of 4th Place
1.	Athletics (M)	Allahabad	Punjabi	G.N.D.U.	Allahabad	Madras
2.	Athletics (W)	Allahabad	Calicut	G.N.D.U.	Gandhiji	Kerala
3.	Boxing	Panjab	Panjab	Punjabi	H.P. & Poona	—
4.	Cycling (M)	Punjabi	Punjabi	Kurukshetra	Panjab	Rajasthan
5.	Cycling (W)	Punjabi	Punjabi	T.I.E.T.	—	—
6.	Gymnastic (M)	Manipur	G.N.D.U.	Vikram	Delhi	—
7.	Gymnastic (W)	Manipur	NOT HELD			
8.	Malkhamb	Manipur	Poona	Bhagalpnr	Shivaji	—
9.	Rowing	Calcutta	Calcutta	Jadavpur	Osmania	Lucknow
10.	Cross Country Races (M)	H.A.U.	Punjabi	G.N.D.U.	Shivaji	—
11.	Cross Country Races (W)	H.A.U.	G.N.D.U.	Kerala	Nagpur	—
12.	Swimming (M)	Poona	Delhi	Gandhiji	Poona	—
13.	Swimming (W)	Poona	Bombay	Delhi	Calcutta	—
14.	Water Polo	Poona	Poona	Calcutta	Kerala	Punjabi
15.	Diving (M)					
	(i) High Board	Poona	Lucknow	Delhi	Poona	—
	(ii) Spring Board	Poona	Kanpur	Mysore	D.A. Indore	—
16.	Diving (W)					
	(i) High Board	Poona	D.A. Indore	Lucknow	Calcutta	—
	(ii) Spring Board	Poona	D.A. Indore	Lucknow	Calcutta	—
17.	Wrestling	Marathwada	HAU	Shivaji	GNDU	Meerut
18.	Weight Lifting & Best Physique	Mysore	GNDU	Punjabi	Madras	

II. GAMES PLAYED ON ALL INDIA BASIS

S. No.	Game	Org. Univ.	Winner Univ.	Runners up Univ.	Losing Semi-Finalists	
					Lost to Winners	Lost to Runners up
1.	Ball Badminton (M)	Gandhiji	Madras	Gandhiji	Mysore	Bangalore
2.	Ball Badminton (W)	Mangalore	Kerala	Madras	Bangalore	Nagarjuna
3.	Cricket (W)	Madras	Madras	Ranchi	Poona	Osmania
4.	Squash Rackets	B.H.U.	Delhi	Bombay	B.H.U.	Poona
5.	Tennis (W)	Annamalai	Poona	Madras	Kerala	Bharathiar

III. GAMES PLAYED ON TWO ZONE BASIS

S. No.	Games	Zone	Venue	Winner Univ.	Runners Univ.	Losing Semi-finalists	
						Lost to Winners	Lost to Runners up
1.	Basketball (W)	North East	IIT, Kanpur	GNDU	Delhi	Kurukshetra	R.D. Univ.
		South West	Madras	Bombay	Madras	Bharathiar	Calicut
		AIF	Madras	Bombay	GNDU	Delhi	Madras
2.	Chess	Nort East	R.D. Jabalpur	Delhi	H.S. Gour	Allahabad	Kumaun
		South West	Gandhiji	Bangalore	Madras	Calicut	IIT, Bombay
		AIF	Gandhiji	Bangalore	H.S. Gour	Madras	Delhi
3.	Handball (M)	North East	Delhi	Delhi	Panjab	Punjabi	H.A.U.
		South West	Calicut	Kerala	Andhra	D.A. Indore	Calicut
		AIF	Delhi	Panjab	Delhi	Kerala	Andhra
4.	Handball (W)	North East	Delhi	Panjab	Ranchi	P.A.U.	Delhi
		South West	Calicut	Calicut	Nagpur	Kerala	Amravati
		AIF	Delhi	Calicut	Panjab	Ranchi	Nagpur
5.	Hockey (W)	North East	Ravishanker	G.N.D.U.	Punjabi	Panjab	Kurukshetra
		South West	Banasthali	Gandhiji	Kerala	Bombay	Bangalore
		AIF	Ravishankar	GNDU	Gandhiji		
6.	Kabaddi (W)	North East	GNDU	GNDU	Punjabi		
		South West	Poona	Poona	Bombay	Shivaji	SNDT
		AIF	GNDU	GNDU	Punjabi		
7.	Kho-Kho (M)	North East	Agra	Delhi	Punjabi	Panjab	Kanpur
		South West	Nagpur	Poona	Nagpur	Shivaji	Bangalore
		AIF	Nagpur	Poona	Nagpur	Delhi	Punjabi
8.	Kho-Kho (W)	North East	NOT HELD				
		South West	Mysore	D.A Indore	Poona	Mysore	Nagpur
		AIF	Mysore	Poona	D.A. Indore	GNDU	Calcutta
9.	Tennis (M)	North East	A.M.U.	A.M.U.	Delhi	Lucknow	Panjab
		South West	Bharathiar	Bharathiar	Madras	Anna	Osmania
		AIF	Bharathiar	Bharathiar	Madras	AMU	
10.	Volleyball (W)	North East	GNDU	GNDU	Punjabi	Panjab	Gauhati
		South West	Saurashtra	Gandhiji	Calicut	Madras	Osmania
		AIF	GNDU	Gandhiji	GNDU	Calicut	Punjabi

IV. GAMES PLAYED ON FOUR ZONE BASIS

S. No.	Games	Org. Univ.	Venue	Winner Univ.	Runners up Univ.	Losing Semi-Finalists Lost to Winners	 Lost to Runners up
1.	Badminton (M)	North	H.P. Univ.	H.P.U.	Delhi	Panjab	Rohilkhand
		South	Nagarjuna	Calicut	Nagarjuna	Osmania	Gandhiji
		West	Bombay	Poona	Nagpur	Bombay	Jiwaji
		East	Ravishankar	Gauhati	Ravishankar		
		AIF	Bombay	Poona	Nagpur	Calicut	
2.	Badminton (W)	North	H.P. Univ.	Delhi	GNDU	Kurukshetra	H.P.U.
		South	Nagarjuna	Madras	Gandhiji	Karnataka	Calicut
		West	Bombay	Poona	Bombay	Shivaji	Nagpur
		East	Ravishankar	Ravishankar	Jadavpur		
		AIF	Bombay	Poona	Bombay	Delhi	—
3.	Basketball (M)	North	Avadh	GNDU	Panjab	Delhi	Lucknow
		East	Berhampur	Berhampur	Calcutta	Burdwan	Patna
		West	Gujarat Agril.	Bombay	Rajasthan	Nagpur	Baroda
		South	Bharathiar	Kerala	Bharathiar	Madras	Calicut
		AIF	Berhampur	Kerala	Bombay	Bharathiar	GNDU
4.	Cricket (M)	North	Jammu	Panjab	Jammu	A.M.U.	Delhi
		East	Calcutta	Calcutta	R. Bharati	H.S Gour	Patna
		West	Rajasthan	Poona	Baroda	Gujarat Agril.	Bombay
		South	Bangalore	Madras	Bangalore	Osmania	Bharathiar
		AIF	Calcutta	Bangalore	Madras	Panjab	Calcutta
5.	Football	North	Panjab	Panjab	GNDU	AMU	Agra
		East	Burdwan	Burdwan	Jadavpur	Kalyani	Manipur
		South	Kerala	Gandhiji	Calicut	Madras	
		West	Amravati	Jiwaji	Shivaji	Goa	APS, Rewa
		AIF	Burdwan	Burdwan	GNDU	Calicut	
6.	Hockey (M)	North	Panjabi	Panjab	Punjabi		
		East	Sambalpur	Ranchi	H.S.Gour	Guru Ghasidas	Ravishankar
		South	Karnatak	Bangalore	Bharathidasan	Madras	Nagarjuna
		West	Bhopal	Bhopal	Poona	D.A. Univ.	Amravati
		AIF	Sambalpur	Panjab	Bangalore	Punjabi	Ranchi
7.	Kabaddi (M)	North	Kurukshetra	Kurukshetra	GNDU	M.D.U.	Meerut
		East	Patna	Burdwan	Vikram	H.S. Gour	Guru Ghasidas
		South	Annamalai	Madurai Kamaraj	Mangalore	Annamalai	Mysore
		West	Amravati	Poona	Shivaji	Amravati	APS, Rewa
		AIF	Annamalai	GNDU	Burdwan	Mangalore	Madurai
8.	Table Tennis (M)	North	NOT HELD				
		East	Bidhan Chandra	Jadavpur	Calcutta	Bidhan Chandra	Burdwan
		South	Madras	Madras	Gandhiji	Osmania	Anna
		West	NOT HELD				
		AIF	NOT HELD				
9.	Table Tennis (W)	North	NOT HELD				
		East	Bidhan Chandra	Dibrugarh	Rani Durgavati	Patna	H.S. Gour
		South	Madras	Bangalore	Madras	Calicut	Anna
		West	NOT HELD				
		AIF	NOT HELD				
10.	Volleyball (M)	North	Meerut	Allahabad	Panjab	Meerut	Kurukshetra
		East	Ranchi	Ranchi	Burdwan	Ravishankar	Bidhan Chandra
		South	Osmania	Kerala	Gandhiji	Calicut	Osmania
		West	Shivaji	Poona	Rajasthan	Nagpur	Shivaji
		AIF	Shivaji	Allahabad	Kerala	Gandhiji	Ranchi

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(Council of Scientific & Industrial Research)

Advertisement No. 8/87

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(Rs. 3000-100-3500-125-4500)
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Post No. (iii) (Reserved for SC candidates)
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Post No. (iv) (Reserved for ST candidate)
Ist class M.Sc. or Ph.D. with 4 years research experience in Chemistry and Natural Products, preferably in the area of chemistry and biosynthesis of marine natural products.
Post No. (v) (Unreserved)
Ph. D. (Chemistry) with good academic record or Ist class M.Sc. with 4 years research experience in the area of QSAR or computographics. **Job requirement** : To undertake research involving design of biologically active molecules.

4. **Medical Officer** : 1 post (Unreserved)
(Rs. 2200-75-2800-EB-100-4000)
M.B.B.S. preferably with some clinical experience and postgraduate qualifications in some clinical speciality and good academic record. Candidates having qualifications/experience in radiology/pathology will be given preference.

5. **Scientist 'A-I'** : 1 post (Unreserved)
(Rs. 2000-60-2300-EB-75-3200-100-3500)
B.Sc./Degree in Commercial Arts/5 years Diploma Course in colour and black and white photography/3 years course in Medical Science photography from a recognised Institute or University with a minimum of 5 years experience after graduation. **Job requirement** : The candidate will be required to undertake the work of photomicrography, microphotography, outdoor and indoor

colour and black and white photography and may have to draw scientific diagrams and charts. He will be expected to superwise the work of a group of artists and photographers.

6. **Senior Technical Assistant** : 1 Post (Unreserved)
(Rs. 1640-60-2600-EB-75-2900)
B.Sc. (Biology Group) with at least 3 years experience or work in a Pharmacology Laboratory or M.Sc. (Zoology or Biochemistry) with experience of work in a Pharmacology Laboratory. **Desirable** : Familiarity with the use of modern equipment and techniques used in pharmacological research. **Job requirement** : To assist the Sr. Scientists in Pharmacological Research.

7. **Junior Technical Assistant** : 3 Posts
(Rs. 1400-40-1800-EB-50-2300)

Post No. (i) (Reserved for SC/ST)
B.Sc. with Physics, Chemistry and Mathematics. Knowledge of electronic/electrical equipment required for process control and knowledge of microprocessor, computer etc. will be additional advantage. **Job requirement** : Will be looking after instruments used in fermentation laboratory. May have to work on shift duty.

Post No. (ii) (Unreserved)
B. Sc. with Physics and Mathematics/Diploma (3 years) in Mechanical Engineering/Technology or equivalent. Experience in pipe fitting work, welding, operation of general workshops machines and experience in mechanical maintenance of Fermentation or Chemical plants etc. desirable. **Job requirement** : To look after mechanical maintenance of fermentor and supporting equipment. May have to work on shift duty.

Post No. (iii) (Unreserved)

A graduate degree in Science with Zoology as one of the subjects and a good academic record. Candidates having experience in an Animal House or Animal Research programmes will be preferred.

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1. **General Conditions**

   All the above posts carry usual allowances as admissible under the rules of Govt. of India.
2. A lower standard of suitability consistent with efficiency will be applied in respect of Scheduled Caste/Scheduled Tribe candidates for the reserved posts. Candidates belonging to these communities should invariably enclose an attested copy of the original caste certificate issued by a competent authority with their application failing which they will not be entitled to the concessions otherwise admissible to them. In the event of non-availability of SC candidates for the post of Scientist 'B' the post will be filled up by general candidate by following the prescribed procedure. Post No. 7 (i) is reserved for Scheduled Tribe candidate. If Scheduled Tribe candidates are not available, the Scheduled Caste candidates will be considered.
3. Since it is not possible to call all the eligible candidates for interview, the applications will be shortlisted for the purpose and the decision of the Director will be final.
4. Applicants called for interview will be paid single second class rail fare to and fro the actual place of undertaking the journey or from the normal place of residence as mentioned in the application whichever is nearer to Lucknow Railway Station.
5. The prescribed application form may be obtained from the Senior Administrative Officer, Central Drug Research Institute, Chattar Manzil Palace, P.B. No. 173, Lucknow-226001 (U.P.) by sending a requisition duly indicating the post and advertisement number alongwith a self-addressed envelope of size (23x10 cm.). Any request for applicction form received after 28.8.87 will not be entertained for supply by post. Application duly completed (supported by attested copies of certificates and testimonials) alongwith a non-refundable fee of Rs. 10/- (no application fee is prescribed for SC/ST candidates) in the form of crossed Indian Postal Order drawn in favour of the Director, Central Drug Research Institute, Chattar Manzil Palace, Lucknow should reach Director, CDRI, Lucknow on or before 15.9.87. Application received after this date will not be considered.
6. Separate application for each post alongwith requisite postal order in a separate envelope indicating the advertisement number and post applied for should be sent.
7. Candidates in Government/Semi-Govt. Organisations, public undertakings and autonomous bodies should route their applications through proper channel.
8. The number of vacancies to be filled may vary at the time of actual selection and due consideration for reservation of posts will be given where necessary.
9. Canvassing in any form and/or bringing in any influence political or otherwise, will be treated as a disqualification for the post.
10. Any of the particulars furnished by an applicant if found incorrect at any stage his/her candidature is liable to be rejected and/or if already appointed, his/her service is liable to be terminated.
11. Interim enquiries will not be entertained.

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The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Anto, K.M. *The relationship between the projectivity of Hom (M.M.) and M when M is a module of finite projective dimension and also to determine cases in which the rigidity conjecture holds.* Kerala. Dr. M.I. Jinnah.

2. John, Tutu M. *Some of the properties of regular semigroups.* Kerala. Dr. K.S.S. Namboodiripad.

3. Krishnan E. *Operator semi group.* Kerala. Dr. K.S.S. Namboodiripad.

4. Raveendran Nair, V. *The structure of some special classes of regular semigroups to occur in geometry.* Kerala. Dr. A.R. Rajan.

5. Thankammal, V.K. *Algebraic theory of semi-groups.* Kerala. Dr. K.S.S. Namboodiripad.

Statistics

1. Naser Ahmed. *Sampling theory : Some aspects of unequal probability sampling from finite population.* Marathwada. Dr. M N. Despande.

Physics

1. Sharma, Bhupat. *Atomic and molecular physics with lasers.* Delhi. Prof. S.M. Biswas and Dr. Manmohan.

2. Suryavanshi, S.S. *Characterisation, electrical and magnetic properties of some substituted ferrites.* Shivaji. Dr. S.R. Sawant.

Chemistry

1. Biswas, Anjana. *Studies of some potential anticancer agents.* Delhi. Dr. Ramesh Chandra.

2. Samuel. Mathew M. *Photochemistry of some nitro aromatics Part I to Photo-chemistry of N.N. dialkyl amino nitro diphenyl methanes.* Kerala. Dr. C.P. Joshua.

BIOLOGICAL SCIENCES

Marine Biology

1. Balakrishnan, M. *Ecobiological studies of the sphaeromatids of the South West Coast of India.* Kerala. Dr. N. Balakrishnan Nair.

2. Oommen, P.M. *Studies on the estuarine Benthos along with South West Coast of India.* Kerala. Dr. N. Balakrishnan Nair.

Botany

1. Abraham, K. *Studies on the sexual potentiality of edible yams.* Kerala. Dr. P. Gopinathan Nair.

2. Abraham, M. Saju. *Evaluation of the hazards posed by industrial effluents on plants.* Kerala. Dr. Susan Abraham.

3. Mathew, George. *Floristic, ethnobotanical and phytosociological spectra of Trivandrum District.* Kerala. Dr. C.A. Ninan.

4. Nair, Rajalakshmi B. *Studies on the effects of inorganic fertilizers on plants.* Kerala. Dr. Susan Abraham.

5. Prajapati, Rajendra Kumar. *Productivity pattern and nutrient cycling in successional forests of the Western Himalayas.* HS Gour. Prof. G.P. Mishra and Dr. P.K. Khosla.

6. Radhamany, P.M. *Investigations on the causes of sterility in some horticultural species.* Kerala. Dr. P.I. Kuriachan.

7. Satish, D.K. *Studies on the mycoflora of Industrial effluents.* Kerala. Dr. T.A. Abraham.

8. Vijayakumar, M.G. *Studies on the tribes Galegeae and Hedysareae (Fabaceae) in South India.* Kerala. P.I. Kuriachan.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Rahman, Fouzia. *On MHD flows of viscous incompressible fluids.* BHU.

2. Shiv Prasad. *On some investigations in optimization methods in the area of control theory and mathematical programming,* BHU.

3. Subbarao, S. *Exceptional values af entire and maromorphic functions.* Bangalore.

Physics

1. Dharmaprakash, S.M. *Studies in gel growth and characterisation of barium oxalate dihydrate and barium cadmium oxalate crystals.* Mangalore.

2. Dinesh Kumar. *Studies on dielectric relaxation in some bio-organic materials.* Durgawati.

3. Dubey, Lakhan Lal. *Thermo and photo electrets in thin and thick polymer films.* HS Gour.

4. Gadkaree, Alka K. *Equilibrium and stability of self-gravitating configurations.* Delhi.

5. Kulkarni, Prithviraj Govindrao. *Studies on ferroelectric solid solutions of barium strontium titanate and barium calcium titanate.* Shivaji.

6. Nagar, Vijai Kumar. *Studies on selective surfaces on solar collectors.* Delhi.

7. Omanwar, Shriniwas K. *Interactions between dislocations and colloid centres in alkali halides.* Nagpur.

8. Pal, Amita. *Analysis of radiation effect (gamma and U.V.) on ligand macromolecule interaction and structure function relationship.* Calcutta.

9. Pal, Pratibha. *Secondary cosmic ray spectra in the earth's atmosphere.* Calcutta.

10. Satpathy, Uma Charan. *Charge transfer and some other processes in atomic physics.* Utkal.

11. Satyendra Kumar. *Ellipsometric studies of some structural aspect of amorphous Si, Ge and Ge-Se films.* IIT, Delhi.

12. Singh, Om Prakash. *AB initio studies on the electronic structure and vibrational frequencies of some substituted benzenes.* BHU.

13. Singh, Udai Pratap. *Equilibrium properties of liquids and liquid crystals : A theory of translational and orientational freezing.* BHU.

14. Subrahmanyam, Vaddi Rama. *Study of laser intensity fluctuations in random aud nonlinear media.* IIT, Delhi.

15. Virendra Pratap. *Studies on the electrical and magnetic properties of rare-earth molybdates and some of their oxides.* Gorakhpur.

Chemistry

1. Aggarwal, Anil Krishan. *Study of nucleophilic addition to some nitrile oxides.* Delhi.

2. Bajaga, Shankar Dnyandeo. *Kinetics and mechanism of oxidation of diamides by pottassium permanganate.* Shivaji.

3. Divakar, Tella Elisha. *New spectrophotometric methods for the determination of some antibiotics.* Andhra.

4. Doshi, Ashokray Goverdhandas. *Synthesis and reaction of flavanoids.* Amravati.

5. Dutta Purkayastha, Ranendra N. *Synthesis, reactivity and structural assessment of hetero-ligand peroxo, acetate and acetylacetonato complexes of uranium (VI) and oxalate and mixed ligand-fluoro complexes of manganese (III).* NEHU.

6. Gadiyar, H.R.A. *Studies on heterocyclic thiols as complexing agents, analytical reagents and corrosion inhibitors.* Mangalore.

7. Gupta, Rakesh Kumar. *Phytochemical investigation of some indigenous medicinal plants.* HS Gour.

8. Indu Rani. *Synthesis of some natural flavonoids and analogues.* Delhi.

9. Khalaf, Nooman Abdul Karim. *Analytical application of chelating ion exchanger type ion exchangers.* Nagpur.

10. Khanna, Anita. *Studies on thermodynamic and transport properties of some multicharged electrtolytes involving binary aqueous mixtures.* HP.

11. Khattri, Parth Sarthi. *Chemistry of medicinal plants.* BHU.

12. Mulik, Ganpatrao Narayan. *Solvent extraction studies of some metal ions using basic ion exchangers.* Shivaji.

13. Pandey, Ram Nagina. *Studies in behaviour of some monocarboxylic acid and copper salts in propylene carbonate.* BHU.

14. Paranjape, Manohar Vasudeo. *α-naphthyl analogues of flavonoids in the synthesis of oxygen and nitrogen heterocyclics.* Amrawati.

15. Sahu, Jayanti Kumar. *Studies on purine analogue heterocycles and thiazolidinones.* Sambalpur.

16. Sarin, Inder Mohan. *Studies in solid complexes and coordination polymers.* Nagpur.

17. Shanta, N.C. *Lipid and lipid associates in growing plant-tissues.* Osmania

18. Shashikala, K. *Studies on transition metal chelates of*

some heterocyclic carboxylic acids and their N-oxides in aquo-organic media. Osmania.

19. Shrivastav, Swami Prasad. *Studies of the effect of surface active compounds on the reduction of oxygen of DME in aqueous media specially in cane juice in Sugar Industry.* Bundelkhand.

20. Tyagi, Renu. *Synthesis of some pyrimidine, thiazole and pyrazole derivatives as potential antifungal and antibacterial agents.* Delhi.

21. Varshney, Madhu. *A study of chemical constituents from medicinal plants of Bundelkhand Region.* Bundelkhand.

22. Verma, Ashok Kr. *Conformational analysis about N-C and N-N bonds and its application in stereochemical assignment by NMR spectroscopy.* BHU.

23. Yegnaraman, V. *Investigations on kinetics of electrode processes : Studies on exponential transient technique to corrosion kinetics.* BHU.

Earth Sciences

1. Narasimha Raju, Potturi Appala. *Some agroclimatic studies of North Coastal Andhra.* Andhra.

2. Sat Paul. *Stratigraphy and palaeontology of the cambrian sequence in Parahic Valley. Spiti.* Jammu.

3. Satyendra Kumar. *Geochemical specialization and evolution of Kala Doongar Complex, Patcham Island, Distt. Kutch, Gujarat.* BHU.

4. Someshwar Das. *Cumulus cloud parameterization in different phases of the summer monsoon.* IIT, Delhi.

5. Srivastava, Sudhir Kumar. *Geochemistry of pelagic sediments from the Indian Ocean.* Delhi.

6. Tara Chandra. *Structural and geomorphological studies of the Pinder Valley in District Almora and Chamoli with special reference to the main central thrust.* Kumaun.

Engineering & Technology

1. Balasubramanian, A. *Some studies on the elasto-dynamic behaviour of unbalanced and counter-weighted fout-bar mechanisms.* IIT, Delhi.

2. Bajaj, Mukti. *Studies on the effect of irradiation on the milling, physico-chemical characteristics, storability and cooking quality of rice.* PAU.

3. Bhambri, Sushil Kumar. *The influence of microstructure on stage II fatigue crack propagation.* BHU.

4. Biswas, Sudhendu Kumar. *Some studies on behaviour of flocculent particles in water.* Delhi.

5. Chandrasekhar, T.C. *Processing and preservation of oil sardines by smoke curing.* Mangalore.

6. Dahasahasra, Sanjay V. *Significance of tapering in the process of flocculation.* Nagpur.

7. Khurana, Hemamalini. *Variable structure control design for large scale systems.* IIT, Delhi.

8. Mohd. Zubair. *Efficient systolic architectures for matrix, signal processing and graph related-problems.* IIT, Delhi.

9. Om Prakash. *Investigations on the dynamic behaviour of bolted joints.* BHU.

10. Om Prakash. *Studies of momentum and heat transfer to Newtonian and non-Newtonian fluids flowing across tube banks.* BHU.

11. Prasad Nishtala. *Low stress creept in selected metallic materials.* BHU.

12. Sharma, Tripurari. *Swelling characteristics of ion ore pellet.* BHU.

13. Subramonia Pillai, U.T. *Effect of particulate size and weight fraction on the mechanical properties, fracture and fatigue characteristics of aluminium-graphite and aluminium-zircon particulate composites.* IIT, Delhi.

14. Veerendra Kumar. *Optimal limit state design of reinforced concrete cylindrical siles supported on shaft.* BHU.

INSA Medal for Young Scientists—1988

Instituted by the Indian National Science Academy in 1974 the medal is awarded annually in recognition of outstanding work of scientists below the age of 32 (as reckoned on 31st December preceding the year of award). Only those born on or after January 1, 1956 are eligible for consideration in 1988. The work done in India by the nominee will be taken into consideration for the award.

The awardee is presented a medal and a cash award of Rs. 5,000/-. In addition, the recipient is considered for a research grant by the Academy not exceeding Rs. 20,000/- per year, including a stipend for a JRF, for a period of three years for continuing research work, provided the research proposal is considered worthy of such support. Preferential consideration may be given under partial travel grant scheme for attending international conferences.

Nominations for the awards for 1988 may be made by Fellows of the Academy, established scientific societies of all India character, University faculties and departments, or research institutions.

The last date for the receipt of nominations in the Academy is **November 15, 1987**.

Nomination Proforma can be obtained from the Indian National Science Academy, Bahadur Shah Zafar Marg, New Delhi-110002 by sending a self addressed envelope of 28 cm X 12 cm size.

CLASSIFIED ADVERTISEMENTS

ADMISSIONS

ALIGARH MUSLIM UNIVERSITY
ALIGARH
ADMISSION NOTICE NO. VII
SESSION—1987-88

Applications are invited from eligible candidates for admission to M. Phil./Ph.D. degree courses during the session 1987-88 in the Departments under the following Faculties.

1. **Faculty of Arts**

   Department of English/Philosophy/Linguistics/Sanskrit/Urdu/Hindi/Arabic/Modern Indian Languages.

2. **Faculty of Social Sciences**

   Department of Economics/Education/History/Political Science Psychology/Sociology/West Asian Studies/Islamic Studies.

3. **Faculty of Science**

   Department of Chemistry/Geography/Geology/Statistics/Mathematics/Physics.

4. **Faculty of Life Sciences**

   Department of Bio-chemistry/Botany/Zoology/Centre of Wild Life & Ornithology.

5. **Faculty of Commerce**

   Department of Commerce/Business Administration.

Faculty of Medicine

Department of Microbiology/Bio-chemistry/Pharmacology/Anatomy.

7. **Faculty of Engg. & Technology**

   Department of Civil/Electrical/Mechanical/Chemical Engineering.

8. **Faculty of Law**

   Department of Law

9. **Faculty of Theology**

   Department of Sunni/Shia Theology

10. Institute of Biotechnology

Eligibility Requirements

Master's degree (M.A., M.Sc., M.Com., M.Ed., M.Th. LL.M. etc.) form this University or an equivalent examination recognised by this University, with not less than 50% marks or equivalent grade, in a subject relevant to the field of research, subject to any further requirements for eligibility laid down by the Boards of Studies/C.A.S.R. concerned from time to time.

How to Apply

The prescribed application form may be obtained from the Deputy Registrar (Admissions), Post Box No. 52, Aligarh Muslim University Aligarh-202001, on requisition either in cash or through crossed Indian Postal Order worth Rs. 3/- payable to the Finance Officer, A.M.U., Aligarh. If the form is required to be sent through ordinary post, a self-addressed envelope of 9" x 6" in size, affixing stamps worth Rs. 3/40, may be sent alongwith the requisition. In case the form is desired to be sent through registered post, stamps worth Rs. 7/90 may be affixed on the self-addressed envelope.

Applications complete in all respects, supported by the relevant documents, alongwith a registration fee of Rs. 5/- (non-refundable) through crossed Indian Postal Order payable to the Finance Officer, A.M.U. Aligarh, should reach the Deputy Registrar (Admissions), Post Box No. 52, Aligarh Muslim University, Aligarh-202001 **on or before 17.8.1987.**

Incomplete applications or those received after the expiry of the last date shall not be accepted, and no further correspondence will be entertained in this respect.

Candidates selected for admission will be intimated of the date for completion of admission.

N. Moideen
CONTROLLER OF EXAMS. AND ADMISSIONS

APPOINTMENTS

INDIRA KALA SANGIT VISHWAVIDYALAYA
KHAIRAGARH (MP)
No. RD/87/780 Dated : July 14, 1987.

Applications are invited for the following posts in the University Teaching Departments, viz. A PROFESSOR IN FINE ART (PAINTING), B. READER IN ENGLISH AND TABLA C. LIBRARIAN.

Scales of Pay : PROFESSOR & LIBRARIAN Rs. 1500-60-1800-100-2000-125/2-2500, READER Rs. 1200-50-1300-60-1900. The grade for the above posts are likely to be revised. All the posts are permanent and carry CPF benefits and DA/ADA at University rates from time to time. Appointees will be on probation according to University rules. Retirement age 60 years. Reservation for posts for SC/STs. will be according to Government rules. If candidates are not available or not found suitable, posts will be filled up from general categories. Prescribed application form (in four copies) and other details may be obtained from the Registrar by sending self addressed stamped envelope of Rs. 3/- of 25 x 12 cms. Application fee Rs 25/- for Professor & Librarian and Rs. 20/- for Reader, in the form of I.P.O. Last date for receipt of application form in four copies is **30th September, 1987.** Candidates called for interview will be required to come at their own cost. Candidates who are in service must apply through proper channel. Those who have already applied for the post of Librarian and Reader (English & Tabla) in response to the Advt. No. Dev./87/3761, dt. 1.5.87 need not apply again.

M.K. Gangajaliwale
REGISTRAR

BANARAS HINDU UNIVERSITY

(Advertisement No. 3/1987-88)

APPLICATIONS are invited for the undermentioned post. The benefit of Provident Fund/Pension, Dearness Allowance, House Rent Allowance and City Compensatory Allowances are admissible according to University rules. The retirement age of the University employees is 60 years. Higher starting salary within the grade is admissible to specially qualified and experienced candidate.

Application will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal Orders of Rs. 10/- (for Rs. 2.50 for the candidates belonging to Scheduled Caste/Scheduled Tribes category) in favour of the Registrar, BHU towards application fee. Application form will be supplied on receipt of Crossed I.P.O./Bank Draft of Rs. 2/- in favour of Registrar, B.H.U. and self-addressed envelope of 23 cm x 10 cm size carrying stamps of Rs. 1.80. Candidates called for interview will be paid actual Railway fare by the Second Class plus reservation charges for sleeper, if paid, and/or actual Bus fare from the present residence bothways by the shortest route as per university rules. No other expenses will be paid.

Application alongwith attested copies of certificates and marksheets in support of the qualifications & experience mentioned in the application and be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 INDIA.

The last date for receipt of application in the Office of the Registrar (Selection Committee Section), Banaras Hindu University either by post or by hand will be **August 20, 1987.** Application will be received by hand at the Counter only upto 2.30 P.M. on each working day till the last date. No application shall be entertained after the last date from external, in service employees and the candidates residing abroad.

UNIVERSITY STUDENTS' HEALTH CARE COMPLEX

(Outdoor Service & Indoor Ward)

1. **Chief Medical Officer** (temporary likely to continue) (One)

Grade : Rs. 1100—1600+N.P.A. as per rules.

Qualifications

Essential : (1) M.B.B.S. or equivalent qualification recognised by the Medical Council of India.

(2) M.D./M.S. in any clinical subject including P.S.M. or equivalent Postgraduate qualification recognised by the Medical Council of India.

(3) 10 years standing in medical profession.

Desirable : (1) Experience of working in a large Hospital/Medical Centre or Health Centre or similar organisation in a senior position.

(2) Experience of Hospital/Health Service Administration.

KHAJA EDUCATION SOCIETY,

RAUZA BUZRUG: GULBARGA.

No. KES/KBNCE/APT/1987-88 **Dt. 18.07.1987**

WANTED

Applications are invited from the eligible candidates for the following posts in Khaja Banda Nawaz College of Engineering, Gulbarga.

Sl. No.	Name of Post	No. of Post.	Essential Qualification required.
1.	Professor in Electronics & Commn.	01	M.E. in the subject with 7 yrs. experience OR Ph.D—with 4 yrs. experience, Preferred.
2.	Asstt. Professor in Electronics & Commn.	01	M.E. in the subject with 5 yrs. experience OR Ph.D—with 2 yrs. experience.
3.	Lect. in Electronics and Communication	02	M.E./M. Tech I or II class OR B.E./B.Tech I class in the subject.
4.	Professor in Instrumentation Engg.	01	M.E. in the subject with 7 yrs. experience OR Ph.D—with 4 years exp.
5.	Asstt. Professor in Instrumentation Engg.	01	M.E. in the subject with 5 yrs. experience OR Ph.D—with 2 yrs. exp.
6.	Lecturer in Instrumentation Engg.	01	M.E/M.Tech I or II class OR B.E./B.Tech. I class in the subject.
7.	Asstt. Professor in Mechanical Engg.	01	M.E. in the subject with 5 yrs. experience OR Ph.D with 2 yrs. experience.
8.	Lecturer in Mechanical Engg.	01	M.E./M.Tech. I or II class OR B.E./B.Tech. I class in the subject.
9.	Lecturer in Physics.	01	M.Sc. Ist class in the subject.
10.	Lect. in Mathematics	01	—do—

Salary and allowances will be paid as per A.I.C.T.E. pay scales. Salary is negotiable according to merit and experience. Applications with full bio-data and copies of educational certificates should be addressed to the Hon. Secretary, so as to reach this office on or before 17.**08**.1987

Hon. Secretary

NATIONAL INSTITUTE OF HYDROLOGY

JAL VIGYAN BHAWAN

BOORKEE

Advertisement No. 5/87-NIH

Dated : July 17, 1987

Applications are invited for the following posts in National Institute of Hydrology (A Govt. of India Society), Roorkee from Indian Nationals Satisfying qualifications and experience laid down therefor :-

1. SCIENTIST 'B' : 5 Posts in the areas of :

a—Surface Water Hydrology —3 posts

b—Atmospheric Land Surface Modelling —1 post

c—Hydrological Investigation —1 post

Scale of Pay : Rs. 2200-75-2800-EB-100-4000 (Revised). The total emoluments at the initial of the scale is Rs. 2376/- excluding H.R.A.

Age : Below 30 years

Qualifications : a-For Area : SURFACE WATER HYDROLOGY :

A Bachelor's degree in Civil Engg. with minimum of 60% marks or 7.0/10.0 CPI or equivalent.

OR

Master's degree with specialisation in Water Resources/Hydraulic Engg./Hydrology, with minimum of 60% marks or 7.0/10.0 CPI or equivalent.

b—For Area :

ATMOSPHERIC LAND SURFACE MODELLING :

A master's degree in Science with specialization in Physics/Meteorology with minimum of 60% marks or 7.0/10.0 CPI or equivalent.

c—For Area :

HYDROLOGICAL INVESTIGATION :

A Master's degree in Physics/Chemistry with minimum of 60% marks or 7.0/10.0 CPI or equivalent with specialization in Nuclear Physics/Chemistry.

The above mentioned post carry usual allowances as admissible under the Central Government Rules. Age will be relaxable for persons already in service in the Institute and other Govt./Semi-Govt./Autonomous Organisations as well as candidates belonging to SC/ST community, retrenched employees of Defence Services and Physically handicapped persons, as per rules of the Government of India.

Age will be determined as on 14.9.1987.

Persons already employed in Govt./Semi Govt./Autonomous Bodies should apply through proper channel. Application not forwarded through proper channel may not be considered.

Application forms may be obtained by 31.8.87 from the Chief Administrative Officer, National Institute of Hydrology, Jal Vigyan Bhavan, University of Roorkee Campus, Roorkee-247667 (U.P.) by sending a self addressed envelope of size 11"x5". Application forms duly completed in duplicate with copies of all testimonials alongwith an application fee in the form of Indian Postal Order of Rs. 8/- (SC/ST candidates are exempted from payment of fee) payable to the National Institute of Hydrology at the Roorkee, University Post Office should reach the Chief Administrative Officer, National Institute of Hydrology, Jal Vigyan Bhavan, University of Roorkee Campus, Roorkee-247 667 (UP) on or before **14.9.1987.**

The appointment to the post carries with it the liability to serve anywhere in India.

OSMANIA UNIVERSITY

HYDERABAD-500 007 (AP)

Advertisement No. 4/87

Dated : July 16, 1987.

Applications in the prescribed form together with the registration fee of Rs. 5/- payable through I.P.O./Demand Draft only drawn in favour of the Registrar, O.U. are invited for the following posts in the University service at the Centre for Area Studies so as to reach the undersigned in person or by post on or before **20th August, 1987.**

1. Reader in Economics —One
2. Reader in Political Science—One
3. Research Associate —Two

Qualifications

Post No. 1 & 2

1. Consistently good academic record with first or high second class Master's Degree in the relevant subject with not less than 55% (B+) marks in the aggregate from an Indian University or an examination recognised equivalent thereto from any other recognised University.

2. A research degree of a doctorate standard or published work of an equivalent standard.

3. At least five years of teaching or research experience in the area of Urban & Regional Planning at a University or a Research Centre of repute.

Post No. 3

Ph. D. with M.A. I or II division (55% above) in any one of the following disciplines : Economics/Political Science/Sociology.

SCALE OF PAY

Post No. 1 & 2: Rs. 1200-50-1300-60-1900.

Post No. 3: Consolidated pay in the range of Rs. 1400-2000.

Age : Post No. 1 & 2—Not above 40 years.

Post No. 3 —Not above 35 years.

Note : 1. Age limit does not apply to the employees of this University.

2. Relaxation in age to the extent of five years shall be granted to the candidates belonging to SC, ST & BC.

3. Relaxation in age can be considered in deserving cases.

14%, 4% and 25% reservations are made for SCs, STs & BCs, respectively.

Application forms and other details regarding qualifications etc., can be had from the Director, Department of University Press and Publications, Osmania University, Hyderabad-500 007 on payment of Rs. 4.50 in person or by sending a I.P.O./Demand Draft made payable to the Director and by sending a self-addressed and stamped worth Rs. 2.00 envelope of $14\frac{1}{2}$ x $26\frac{1}{2}$ cms.

REGISTRAR

GURU NANAK DEV UNIVERSITY

AMRITSAR

(ESTABLISHMENT BRANCH)

ADVERTISEMENT NO. 6/87

Applications are invited for the following posts on prescribed form obtainable at a price of Rs. 2/- from the office of the Registrar by making a written request accompanied by self-addressed Rs. 1.40 stamped envelope of 23 x 10 cms. so as to reach this office by 12.8.1987 alongwith crossed Indian Postal Order (s) of Rs. 10/ - for posts at Sr. No. 1 to 24 and Rs. 5/ - for others (non-refundable) dragn in favour of the Registrar, Guru Nanak Dev University, Amritsar.

Persons already in employment must send their applications through their employers. Candidates from within India may not be considered in absentia. Higher start in the grade may be given depending upon qualifications and experience.

The qualifications for the posts of Professor, Reader and Lecturer are as prescribed by the University Grants Commission.

Professor (Grade: Rs. 1500-60-1800-100-2000-125/2-2500)

1. Geography-1
2. Sanskrit-1

Readers (Grade: Rs. 1200-50-1300-60-1900)

3. Sanskrit-1
4. Chemistry-1(Temporary but likely to continue)
5. Ahchivist-1(Grade: Rs. 1200-1900) for Archival Cell in the Deptt. of History.

Lecturers (Grade : Rs. 700-40-1100-50-1600)

6. Persian-1
7. Electronics Technology-2
8. Psychology-1
9. Mathematics-2(UGC)
10. Computer Science-1 (JOC)
11. Chemistry-2
12. Political Science-2
13. Architecture-2
14. Sanskrit-1
15. Lib.Science-1
16. Economics-1
17. Laws-1
18. Laws-3(One Temporary but likely to continue) for Regional Centre, Jalandhar)
19. Panjabi-1(for Regional Centre, Jalandhar)
20. Assistant Archivist-1(Rs. 700-1600) for Archival Cell in the Deptt. of History.
21. Assistant Librarian-1(Grade: Rs. 700-1600)

Junior Research Fellows

22. (i) Physics-2 (Rs.800 P.M. Fixed) (One University, One Common Pool).
    (ii) Psychology-1 (Rs. 800 P.M. Fixed)

Research Associates

23. (i) Sociology-1) Rs. 1400 P.M.
    (ii) Hindi-1) (Fixed)
24. Farm Manager-1 (Grade : Rs. 825-1580)
25. Teaching Assistant-1 (Chemistry Department) (Grade : Rs. 550-900 UGC)
26. Conservationist-1 (Grade : Rs. 425-700) for Archival Cell in the Deptt. of History.
27. Junior Proof Reader-1 (Grade : Rs 680-1120) for University Press.
28. Copy Holder-1 (Grade : Rs. 400-600)
29. Steno-typists (Eng. & Hindi) Grade : Rs. 400-600+Rs. 25 Spl. pay.
30. **Laboratory Attendants** (Grade : Rs. 400-600)
    (i) Physics-1 (JOC)
    (ii) Chemistry-1 (Temporary but likely to continue)
31. Mechanic Glass Blowing-1 (Chemistry) Grade : Rs. 600-1120
32. Technical Assistant Grade-V (Electronics)-1 (Chemistry Deptt.) Grade : Rs. 600-1120.
33. Mechanic-1 (Biology) Grade : Rs. 600-1120.

The number of post may be changed at the discretion of the University. Candidates belonging to Scheduled Castes/Backward Classes of Punjab State when called for interview will be paid Travelling Allowance according to University rules.

Note : Information regarding qualifications/specialisation will be supplied alongwith the application form.

REGISTRAR

REGIONAL ENGINEERING COLLEGE

SILCHAR (ASSAM) 788 010

Advertisement No. 1/1987

Applications are invited for one post of Assistant Registrar (Accounts) and one post of Assistant Registrar (Academic) in the scale of pay Rs. 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200/- per month (unrevised).

Requisite qualification and experience for the post of **Assistant Registrar (Accounts)**

Essential : (i) A Bachelor degree in Arts, Science or Commerce from any of the recognised university.

(ii) At least 6 years experience in accounts and audit matters in Govt. Departments or Govt. or Quasi Govt. institutions/undertakings, out of which atleast 4 years in a supervisory position.

Desirable : (i) Should be proficient in independent correspondence in English and conversant with financial matters, accounts, rules and regulations and budget, audit. (2) S.A.S. passed.

Requisite qualification and experience for the post of **Assistant Registrar (Academic) :**

Essential : (i) A Bachelor degree in Arts, Science or Commerce from any of the recognised university.

(ii) Atleast 6 years experience in any academic institution, out of which atleast 4 years in a supervisory position in administration of students' affairs, conduct of examinations and related matters and in organising student activities in an academic institution of repute.

Desirable : Should be proficient in independent correspondence in English and conversant with University Statute and regulations.

Applications in plain paper (typed) giving full bio-data together with attested copies of the certificates and one recent passport size photograph and an I.P.O. of Rs. 10/- should reach the Principal, Regional Engineering College, Silchar 788010 within one month from the date of publication.

Persons already in service should apply through their present employer or they should produce 'No Objection Certificate' from present employer.

Candidates called for interview will be paid 2nd class railway fare by the shortest route.

H. Bhaumik
PRINCIPAL

SHYAM LAL COLLEGE (EVENING CLASSES)

SHAHDARA-DELHI—110032

Applications on the prescribed form available from the College Office, free of cost, alongwith a self addressed stamped envelope are invited for the post of a Lecturer in Hindi so as to reach the Vice Principal Incharge Evening Classes, latest by **11th August, 1987.**

Essentials : (i) A Doctorate's degree or research work of an equally high standard : and (ii) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (i) and (ii) above may be in relevant subjects

Grade : Rs. 700-40-1100-50-1600 (pre-revised) plus usual allowances admissible under Delhi University Rules.

TILAK RAJ
Vice-Principal
Incharge Evening Classes

NATIONAL METALLURGICAL LABORATORY

(Council of Scientific & Industrial Research)

Jamshedpur-831007.

NML ADVERTISEMENT No. 2/87.

Applications are invited to fill up the following vacancies at the National Metallurgical Laboratory, Jamshedpur-831007, in the grades and disciplines mentioned against each :

1. Scientists

Category-I : Scientist 'EI'—1 post

Scale of Pay : Rs. 3700-125-4700-150-5000.

The above post is in the areas of Electronics and Instrumentation.

Essential Qualifications

First Class Bachelor's Degree in Electronics/Instrumentation with 12 years experience **OR** Post Graduate Degree in Electronics/Instrumentation with 10 years experience.

Category-II : Scientist 'C'/System Analyst—1 Post.

Scale of Pay : Rs. 3000-100-3500-125-4500.

The above posts are required in the area of Computer.

Essential Qualifications

First Class Bachelor's Degree in Engineering/Computer Science/Master's Degree in Mathematics/Statistics/Physics/Computer application with 6 years experience in design and development of application Softwares in BASIC / FORTRAN / PASCAL / COBOL OR Post Graduate Degree in Engineering/Computer Science with 4 years experience in design & development of application softwares as above.

Category-III : Scientist 'B'—3 Posts

Scale of Pay : Rs. 2200-75-2800-EB-100-4000.

The above posts are required in the areas of Instrumentation/Electronics, Maintenance (Electrical), Maintenance (Mechanical).

Essential Qualifications

First Class Bachelor's Degree (Instrumentation/Electronics, Electrical and Mechanical) with atlest two years experience **OR** Post Graduate Degree in relevant fields (Instrumentation/Electronics, Electrical, Mechanical).

2. Documentation Officer (B)—1 Post

Scale of Pay : Rs. 2200-75-2800-EB-100-4000.

Essential Qualifications

First Class Master's Degree in Science/Journalism and preferably followed by Post Graduate Diploma/Degree in Management with established credentials for editing and publication.

3. Category-I : Foreman (B)—1 post

Scale of Pay : Rs. 1640-60-2600-EB-75-2900.

Essential Qualifications

Candidate should have a Diploma in Mechanical Engineering of 3 years duration or equivalent from a recognised Institute with 3-5 years experience in supervision of maltipurpose machine shop.

Job Requirement

To plan and supervise the work in a multipurpose Workshop and to look after the maintenance of the equipment.

Category-II : Mechanical Assistants—2 posts

Scale of Pay : Rs. 1400-40-1800-EB-50-2300

For post (1) : Essential Qualifications

Candidate should have a Diploma in Mechanical Engineering of 3 years duration or equivalent from a recognised Institute with atleast 5 years experience in precision fitting jobs in workshop of repute.

Job requirements

Candidate will be required to work on precision fitting jobs involving marking, use of hand tools, and machines such as lathe, shaper, milling etc., and also guide junior staff in execution of similar jobs. Candidate also capable of undertaking gas/arc/MIG/TIG welding will be given preference.

For post (2) : Essential Qualifications

Candidate should have a Diploma in Mechanical Engineering of 3 years duration or equivalent from a recognised Institute with atleast 5 years experience in fabrication of equipment from drawings and sketches and experience in a R & D Workshop including mechanical maintenance in an organisation of repute.

Job requirement

To plan and undertake fabrication work involving an understanding of drawings, layout, marking and use of gas, arc, MIG and TIG welding.

Selection Procedure : Candidates for posts at **Serial No. 3** will have to compete in (a) an objective type written test, (b) a practical test and (c) interview.

4. Programmer—1 post

Scale of pay : Rs. 1640-60-2600-EB-75-2900

Essential Qualifications

B.Sc. in Physics/Mathematics/Statistics or Diploma in Computer Science with 3-5 years experience in Computer programming in BASIC/FORTRAN/PASCAL/COBOL from a recognised Institute.

Job requirement

To develop and maintain software packages for scientific and business applications.

5. Staff Nurse—1 post

Scale of pay : Rs. 1400-40-1800-EB-50-2300

Essential Qualifications

Qualified Registered Nurse & Midwife from a recognised Institute with 2 years experience as Staff Nurse in a recognised hospital/dispensary.

Job requirement

Selected candidate will be attached to the dispensaries of the Laboratory located at its colonies and will have to perform the duties of general nursing and also to issue medicines to the patients, bandaging of wounds, administrating injections etc., and carry out such other duties as may be assigned to from time to time.

6. Pharmacist—1 post

Scale of pay : Rs. 1320-30-1560-EB-40-2040

Essential Qualifications

Matriculation with a Certificate in Pharmacist from a recognised Institute with 2 years experience as Compounder-cum-Dresser from a recognised hospital/dispensary.

Job requirement

Candidate will be engaged in dispensing of medicines, dressing, besides they will also be responsible for day to day accounting of the medicines dispensed and maintain records. He is also required to attend any emergency duties and any other duties as may be assigned to him from time to time.

7. Cook-cum-Bearer—1 Post

Scale of pay : Rs. 950-20-1150-EB-25-1500

Essential Qualifications

Matriculate with ability to speak English and Hindi with minimum 3 years experience in cooking vegetarian/non-vegetarian dishes etc., in a Hotel/Club/Guest House etc., of repute. Qualifications relaxable in the case of highly experienced candidates.

Job requirements

Selected candidate will be required to stay in the Guest House and will have to attend to the following; (1) Closing and opening of the Guest House, (2) Cooking and serving of break-fast, lunch, dinner etc. (3) Arrange for bedding, dusting, cleaning of utencils etc. (4) Prepare and maintain inventories of utencils, crockeries, furniture etc. (5) Preparation of bills and collection of amounts from guests.

General Information

(1) Upper age limit for posts at Serial Nos. 5, 6 and 7 is 28 years which can be relaxed upto maximum of 5 years in respect of Scheduled Caste/Scheduled Tribe candidates.

(2) All the posts are temporary, but likely to continue. They carry besides pay, usual allowances as admissible under Central Govt. Rules.

(3) Advance increments for candidates will be considered by the Selection Committee on the basis of their credentials and performance.

(4) Application forms for all posts except Serial No. 6 & 7 are obtainable by post (Free of cost) from the Administrative Officer, National Metallurgical Laboratory, Jamshedpur-831007, by sending self-addressed and stamped envelope (Rs. 1.40 paise) of 28 x 13 cm. Completed application forms together with non-refundable application fee of Rs. 8.00 (Rs. 2.00 for Scheduled Caste/Scheduled Tribe candidates) in the form of a **Demand Draft on the State Bank of India, NML Branch,** Jamshedpur, drawn in favour of the Director, National Metallurgical Laboratory, Jamshedpur-831007, alongwith attested copies of certificates/testimonials etc., should reach the Director, National Metallurgical Laboratory, Jamshedpur-831007, on or before **4th September, 1987. Candidates applying for more than one post should submit separate applications alongwith the prescribed application fee specifying No. of Advertisement and post applied for.** Incomplete applications and those received after the last date will not be considered.

(5) Applications for posts at **Serial No. 6 & 7** for which no application fee is required, may be sent on plain paper giving qualifications, experience and age etc., duly supported by copies of certificates/testimonials etc., (Not originals) and should reach the Director, National Metallurgical Laboratory, Jamshedpur-831007, on or before **4th September, 1987.**

(6) Details of the job description/requirements for posts at Serial No. 1 and 2 will be made available alongwith the Application Form on request including general conditions of service.

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V. Anjaneya Sarma
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Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157

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Prof. V. Abraham
DIRECTOR

UNIVERSITY
NEWS

VOL. XXV AUGUST 10
No. 32 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor:
SUTINDER SINGH

Academic Staff Colleges

Some Crucial Issues

Satya Pal Ruhela*

I

It must be said to the credit of the new National Policy on Education—1986 that in the history of higher education in India it has for the first time seriously realised the need of orienting the new entrants to the college and university teaching profession. The University Grants Commission (UGC) has come out with an ambitious scheme of fully financing the establishment of about 50 “**Academic Staff Colleges**” in various universities throughout the length and breadth of the country from this very session. While a number of universities have advertised for the positions of Directors of their Academic Staff Colleges in the last two months, some have already appointed the Directors without observing any procedures of selection.

While the Directors and properly selected staff have yet to be made available to the Academic Staff Colleges in the 50 Universities, these universities first of all need to be properly guided in their innovative and extremely challenging task. Personal enquiries by the author at the University Grants Commission Office have revealed that the re-orientation of Vice-Chancellors of such universities has already begun and one such programme of reorientation of Vice-Chancellors and some functionaries (nominated, if not selected Directors of Academic Staff Colleges) is going to be held at Bombay from 14th August, 1987, under the leadership of Ms. Bengalee, Vice-Chancellor of the University of Bombay. In an area in which virtually no work has been done in our country so far, whatever type or quality of work has thus already started and will be done will be rated as useful. But it appears that in extreme enthusiasm and haste the scheme of Academic Staff Colleges in many Universities may not work in the spirit and with the efficiency the authors of the UGC document **Academic Staff Orientation Scheme”** (1987) [1] had in mind.

While the content part of the orientation courses suggested by the UGC, is fairly good, the UGC seems to have made some basic mistakes in this document.

Firstly, the UGC has not prescribed any set of qualifications necessary and desirable for the Director of Academic Staff College. The result is obvious and instant. University teachers having no training in Education or Training Techniques are being picked up by the university authorities for the Directors' post. Academic Staff Colleges are going to be big establishments involving boarding and lodging of participants year after year and invitations and payments to “experts” from outside as well as inside on a big scale. What can a simple M.A. Ph.D. in Economics or Political Science, himself without any such training or orientation in imparting training, do as Director of an Academic Staff College? What can an Engineer do as Director of such a college ? If the UGC thinks that any professor of any subject or any qualifications will be a suitable Director of an Academic Staff College, then on the same rationale there is no need of providing any orientation to college teachers and spending huge funds on setting up the Academic Staff Colleges. It is hoped that the UGC will soon realise this and issue directions to the universities listing properly evolved qualifications of Director.

**Faculty of Education, Jamia Millia Islamia,*
New Delhi-110025

Secondly, the UGC has given a very free or loose choice to the universities to adopt any—just any sort of format of Academic Staff College, as a separate entity to be set up and designated within the university, as a part of an existing department of continuing education, as a wing of the College Development Council, or in the form of a State Institute of Educational Planning & Administration. This is bound to tell upon the efficiency and ultimate utility of the unit so created to orient the new entrants to colleges and universities. Insiders of universities atleast very well know as to what sort of activities and that too of what quality are actually being done by many departments/units of Continuing Education and the College Development Councils. Whether the UGC authorities know it or not, the fact remains that properly qualified and eminent academicians do not generally wish to be appointed and are not actually appointed in such units in universities, which are not parts of any department or Faculty of the university and whose work is virtually never examined by the Faculties and Academic Councils of the universities. To entrust this crucial task of the orientation of college teachers to such units whom I would call "underdeveloped and weak units "would be most unfortunate. Let there be clear guidelines to the universities to start a separate unit called Academic Staff College, for all other formats would be dysfunctional.

Thirdly, how is it really possible for each and every Academic Staff College, which has just started functioning in July 1987, to swing into action and undertake all sorts of activities like organising Orientation courses for new entrants, Orientation courses for Senior Administrators and Heads of Departments, Principals, etc, indentifying resource personnel in various fields of specialization and familiarising such resource persons with the philosophy and guidelines for the orientation programme, setting up a documentation centre-cum-library, production of specially designed materials required for implementation of the orientation courses, etc.

It would have been better if in the first year only three or four Academic Staff Colleges had been started in some very prominent universities like Delhi and Bombay universities, and charged with the responsibility of production of specially designed materials required for effective implementation of the orientation courses. These materials could then be circulated to all Academic Staff Colleges to be opened next year in many other universities. This would have given solid instructional materials to all the Academic Staff Colleges to use, and a certain level of adademic standard on the part of the trainers as well as trainees would have been possible. Now in its absence, what actully may happen can well be imagined ; guest speakers among friends and favourites would be invited and paid handsomely, vague lectures would be organised, and orientation done in a slipshod manner. How many scholars do we really have in every university who can give comprehensive and up-to-date talks or lectures on Sociology of Education, Economics of Education, Philosophy of Education, Teaching methodology, Classroom techniques, Curriculum development, and in the area of subject upgradation in different specializations. Hence, production of specially designed materials for such orientation courses should have been taken up as the first task by two or three Academic Staff Colleges in the first year. Alternatively, the UGC should even now make it the responsibility of one Staff College directly under its control to produce such materials for all other colleges.

Fourthly, the statement of the UGC that "at present there is no known model of an academic staff orientation programme that can be replicated" is not only wrong but also damaging. It is damaging in the sense that this would give the universities all the more excuse for running their Academic Staff Colleges in whatever good or bad manner they would like them to run after securing cent per cent grants from the UGC. I feel that the Administrative Staff College, Bella Vista, Hyderabad, is in fact and should be taken as a model college by all the Academic Staff Colleges in India. The way in which the orientation courses are imparted by experts making fullest use of modern techniques of teaching and training including hardware technology, the way in which they run their hostels and dining halls, the manner in which their library is organised and made use of, and the manner in which their orientation programmes are organised bear a distinct stamp of quality are the norms which every Academic Staff College in India must be made aware of and encouraged to emulate. It would have been in the fitness of things that the first orientation course for all the Directors of Academic Staff Colleges of the 50 universities should have been organised by the Administrative Staff College so that they could at least learn what quality of functioning is expected of their Academic Staff Colleges and their essential services, like boarding, lodging, library, etc.

Fifthly, the Blueprint "Academic Staff Orientation Scheme" states "In order to make an orientation course optimally effective, the Academic Staff College will maintain a systematic record of all the participants, their acheivement, their professional growth, and change in their capacities as teachers". This is very important point, but the crux of the matter is that developing such systematic records is not an easy task which every university can do. It requires very careful and elaborate work by evaluation experts. When the universities have started appointing such professors as Directors of Academic Staff Colleges who have no background in education, evaluation, management, training, how will they be able to develop such records and maintain them faithfully ? The New Pay Scales announced by the Government of India imply that the confirmation of new university/college lecturers would depend on their successful completion of the orientation courses. Therefore, it becomes all the more necessary to develop such objective and elaborate criteria records to assess their performance throughout the two or three course modules to be completed in one or two years. In order to have uniformity and quality, it is necessary to develop such records in the very beginning by the UGC itself in a workshop.

II

CURRICULUM OF THE ORIENTATION COURSE

The UGC document "Academic Staff Orientation Scheme" (1987) has suggested the following four components of the orientation course which shall be of 8 weeks duration :

Component A : Awareness of Linkages between Society, Environment, Development and Education

This component should aim at helping the teacher to realise the larger context of education and the role of a teacher in a society. Some illustrative topics to be covered are: secularism, egalitarian society, national integration, multilinguism, multiple cultures, equality status of women, casteism, environmental pollution, poverty, unemployment, urbanization, modernization, rural development, youth, indiscipline, role and responsibility of a teacher, value-based education, Indian tradition and creation of an Indian identity.

Component B : Philosophy of Education, Indian Educational System, and Pedagogy

The component should aim at imparting basic skills that a teacher needs for effective classroom teaching. Some of the illustrative topics are : Educational Philosophy, Learner and the Learning process, Indian Educational System, School Education, Non-Formal Education, Economics of Education, Sociology of Education, Higher Education, Curriculum Design, Teaching Methodology, Classroom Techniques, Teaching Aids, Material Production, Reference and Study Skills.

24 AUG 1987
F. T. R. I., MYSORE

Component C : Subject Upgradation

This component should have two major thrusts :

(i) to enable the teacher to translate the relevant syllabus into a detailed plan of classroom presentation, and to effectively present the basic concepts at the appropriate level, and

(ii) to make the teacher self-sufficient in keeping himself abreast of the new knowledge in his discipline.

Component D : Management and Personality Development

The teacher should understand the interlocking of the various sub-systems within the college/university, and appreciate the role and functions of a teacher within the system.

The teacher should be made aware of the ways in which he may develop his own personality. The topics would include : Logical thinking and discussion. Speech training and debating, Public speaking, Communication skills, Effective writing, Extra-curricular activities, Running a club/society, Sports, Croup behaviour, Team work, and Student counselling.

These components are alright. However each of them seems to be quite lengthy, and it is doubtful if all the topics can be covered in just 35-36, days, out of 8 weeks duration of the orientation course, that will actually be available. Without the help of readily available printed materials, no justice would be done to these topics.

Component C is the softest spot in the curriculum suggested for the orientation course. Most of the university teachers, of sciences and social sciences particularly, themselves do not know the latest trends in their disciplines. It is a well-known truism that the latest trends in contents, teaching and research in subjects like economics, political science, physics, chemistry, mathematics, biology, education, etc. are unknown to majority of our professors and readers, not to speak of the lecturers. How will then it be possible for the professors and readers in different subjects in the universities to provide any academic leadership to the trainees in the Academic Staff Colleges? Had they been so up-to-date and efficient in their respective fields, could our universities and colleges in the country have remained suffering under the culture of mediocrity? It is a plain fact that sociologists like Professor Yogendra Singh Andre Beteille, T.K.N. Oomen, and educationists, like Prof. M. Varma, Prof. R.N. Mehrotra. Prof. L.K. Oad, Prof. V.R. Taneja, Prof. R.P. Bhatnagar, are rare. If such industrious and highly enlightened leaders in various disciplines could be involved in the task of guiding the new entrants to colleges and universities during their period of orientation course in Academic Staff Colleges, then only something meaningful could be expected; every Tom, Dick and Harry in a discipline working in a college or university cannot deliver the goods expected of the experts who would be required to guide the trainees in the experts who would be required to guide the trainees in the Subject Upgradation component of the curriculum. It is necessary that top-ranking experts in the respective disciplines are immediately asked to write small booklets highlighting the latest trends and expectations in the content, teaching and research priorities in their respective fields within six months; they are published by the UGC itself or one specific centrally named Academic Staff College, and then these printed materials are sent for use in all the Academic Staff Colleges to serve as basic reading materials. Lectures and workshops could further add to them locally. Production of such material will lead to precision, efficiency, economy as well as maximum satisfaction to the beneficiaries and prevent the wayward and clumsy efforts of the organizers of so many Staff Colleges who are now suddenly asked to do a job that they do not know and many of them in reality may not be capable of doing.

III

KEY IDEAS FOR THE ORIENTATION PROGRAMMES

Merely organising lectures by the so called experts of the local university holding the ususal sort of seminars, workshops, symposia or contact programmes of the type that we see when certain universities offering correspondence courses organise in haste, with virtually little preparation, careful planning and efficiency, will not serve much purpose. Simply covering the courses under the four components by organising 15-20 lectures in each of them in a mechnical manner will not suffice. What is actually needed is that the organizers of the orientation courses for the new entrants as well the course for the Heads of Departments, Principals, Deans, etc. must themselves first of all search out, gather and be fully convinced with the genuine worth and utility of some of the most crucial ideas about education, role of teacher, demands of society, destiny of man, and the glorious pinnacles or ideals of professionalism.

Such ideas should then be vigorously projected through a variety of techniques or methods in the minds of all the participants of the orientation courses. Naturally, it requires a lot of reading and scanning of literature and research reports, and keeping the windows of the mind open for the new and valuable ideas to come to us from all the four corners of the world in line and space.

According to my own judgement and conviction, some such useful crucial ideas culled from various sources are asunder :

1. UNESCO publication **The Changing Role of the Teacher (1977)** very aptly says this in regard to the teacher's role today :

> "To be a teacher now, in short, is to be a mediators in the encounter between the individual and the mass of information, factual, conjectural and mythological which daily threatens to engulf him—an encounter in which selection and use of knowledge become more important than its absorption.
>
> ...With the shift of major emphasis from the teacher as source and purveyor of knowledge to the teacher as organiser and mediator of learning encounter, a new set of competencies can be identified as components of the professionality of the teacher—as aspects, in other words, of the teacher's role. These competencies may be grouped under the heading of diagnosis, response, evaluation, personal relations, curriculum development, social responsibility and administration." [2]

2. Unless the Conscientization model of educa-

tion as advocated by Paulo Freire is adopted in our colleges and universities, it is impossible to relate education to the realities of our life, to make it an agent of social change and national transformation, and to make our youth practical, nationalist, mature, socially sensitive, and forward looking in their attitudes and ever ready to fight all sorts of social injustices and exploitation in our society. The implications of Freire's model of education for teaching and the role of the teacher must be very carefully understood.

3. S.N. Postlethwait, Professor of Biology at the Perdue University, who is known for his "Audio-Tutorial Approach to Learning" has made these very thrilling statements :

> "The longer I teach, the more I find that nobody really knows what teaching is"
>
> "The fundamental issue in education is change. But individuals start from different levels. I have to mak students understand that the initiative must be their's and that they must move aggressively toward their goals. It means retraining them".
>
> "We do have tests but the goal is really not the grade as much as getting the students to organise the subjects in their minds".
>
> "Upto that time (i.e., his teaching days prior to 1961 when he developed the audio-tutorial system of teaching), I had thought that education was the delivery of what you know. Now I'm convinced that education isn't a delivery system at all. Learning must be done by the learner. He must be involved"[3]

4. John R. Coash, Dean of the School of Natural Sciences and Mathematics, California State College, Bakersfield. offered the following as his rationale for using inquiry approaches in science at Bakersfield :

> "The mass of facts now available prohibits any attempt to teach all. Rather, education in science must stress the discovery of facts, the handling of the data, and particularly the ability to change as new data and exploratory models are discovered and derived".
>
> "Flexibility of instructional programmes will be stressed. ...Lecturing will be minimal, and will be supplemented by individual learning opportunities. Laboratories will be openended, and will consist of exercises but of investigative experiments, in part selected by the student......An attempt will be made to begin the training of students "**to function as creative scientists** "through research participation early in their educational programmes rather than reserving such activity for advanced students."[4]

5. Scientist Einstein's views about morality in our actions must be repeatedly brought home to the new entrants to the college/university teaching profession :

> "The most important human endeavour is the striving for morality in our action. Our inner balance and even existence depend on

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> it. Only morality in our actions can give beauty and dignity to life. To make this a living force and bring it to clear consciousness is perhaps the foremost task of education."[5]

6. Futurologist Alvin Toffler's concept of Acceleration of Change must be understood by all teachers :

> "We no longer 'feel' life as men did in the past. And this is the ultimate difference, the distinction that separates the truly contemporary man from all others. For this acceleration lies behind the impermance—the transience—that penetrates and tinctures our consciousness, radically affecting the way we relate to other people, to things, to the entire universe of ideas art and values."[6]

7. Maxine Greene, well-known curriculum expert has rightly said :

> "My point is that the contemporary learner is more likely than his predecessors to experience moments of strangeness, moments when the recipes he has inherited for the solution of typical problems no longer seem to work.
>
> ...Disorder, in other words, is continually breaking in ; meaninglessness is recurrently overcoming landscapes which were once demarcated, meaningful. It is at moments like these that the individual reaches out to reconstitute meaning, to close the gaps, to make sense once again. It is at moments like this that he will be moved to pore over maps, to disclose or generate structures of knowledge which may provide him unifying perspectives and thus enable him to restore order once again. His learning, I am saying, is a mode of orientation—or reorientation—in a place suddenly become unfamiliar. And 'place' is a metaphor, in this context, for a domain of consciousness intending for ever thrusting outward, 'open to the world'. The curriculum, the structures of knowledge must be presented to such a consciousness as possibility."[7]

8. According to Mrs. Madhuri Shah, Former Chairperson of the University Grants Commission :

> "The University system of the future wil thus be three dimensional. The third dimension, besides the age-old objectives of teaching and research which has been added, is of extension.
>
> ...A graduate of tomorrow will, therefore, be judged as much by what he has done for himself as for the community,"
>
> ...Teaching and learning models for the future must integrate learning and living, the personal, the social and the political."[8]

9. According to Prof. B.P. Lulla, author of a very useful booklet **Orientation in Educational Methodology for College Teachers (1983)** :

> "There are three types of college or university teachers—Scholar, Educator and Professional ...The modern theory of education expects college teacher to be an efficient educator who knows the subject well and communicates it well to the students according to the aptitudes and abilities of the latter. He delivers the goods in colleges and universities. Even that does not satisfy the expectation of a college teacher in our dynamic age. He has to be a professional who can combine the characteristics of a scholar and educator and serve the society or country as a responsible member of teaching profession...."

10. The following comment made by Bernard Crix, Warden of Southend Teachers' Centre, UK, about the Teachers' Centres should apply to the Academic Staff Colleges of our Universities as well :

> "I believe that many teachers, because their views are genuinely sought, feel that they are partners in their own self-improvement and this fosters a true professional attitude".
>
> "Perhaps that is what teachers' centres are really about ; helping teachers become more responsible for themselves, their development and work ; becoming less dependent on someone else telling them what to think. This feeling of personal involvement can show itself in trivial ways."[10]

(*Continued on page* 12)

Women's Studies And The Mother Teresa Women's University

A Suryakumari*

Realising the Women's Studies is conspicuous by ts absence, the Government of Tamil Nadu with ommendable concern for the uplift of women, had stablished the Mother Teresa Women's University xclusively for women, for furthering the advancement of learning, for prosecution of research in Women's Studies, and for providing monitoring and onsultancy services for welfare schemes relating to women. This University should not be construed to e just like any other University except with this ifference, namely, that it is a University of women nd by women, but it should be emphasized that it is or women, an academic institution where in-depth tudies are being made to comprehend the various omplex factors—social, economic, political, legal, ultural and others which stand in the way of enhan- ing the Status of Women. This institution suggests ways and means and devises measures to set in mo- on the process that will remove the disabilities and onstraints under which women labour and enable hem to enjoy equality of rights and opportunities uaranteed by our Constitution and develop into a orum for continued exposure to women's problems. We aim at social transformation through education y getting the cooperation of all sections of society. t is not our intention to strike belligerent postures or dopt militant attitudes. The women's problem is a roblem of society and, as such, mobilizing all possi- le community resources, this University strives to ranslate into reality the views of our immortal Bard, oet Bharathi through education which is the most otent instrument for effecting a change in the unen- iable and subjugated position occupied in our society y women was continue to be held in situations of nferiority, dependence and exploitation.

rincipals' Conference

A Conference of Principals of Women's Colleges f Tamil Nadu was held in June 1984 at Kodaikanal o identify areas of research in Women's Studies and ssign priority to them bearing in mind that the esearch should be relevant to the needs of the times e respond meaningfully to the demands of national development. The response from the Principals was very encouraging and the deliberations covered the following fields :

Women and Society in India,
Women and Economic Development of India,
Women's Education in India,
Indian Women and their Health Status,
Women and Law; and
Women and Home Management

The report of this Conference has been published.

Link with Women's Voluntary Organisations

In order that Women's Studies does not become out of touch with reality, it is necessary for the Women's University to maintain meaningful working relationship with bodies that aim at organising and activating women to enable them to realise their rights and opportunities for growth and development and with this end in view a Meet of Women's Voluntary Organisations was held in July 1984, since such contact is essential to bring into proper perspective the theoretical approach regarding views and ideas concerning Women's needs and problems. The report of this meet is also published.

Education and Employment of Women

In September 1984, a National Seminar on "Education and Employment of Women in India" was held at Kodaikanal and a select group of Scholars, Researchers and Administrators from all over India participated and richly contributed to a theme which has the highest social relevance today. Speaker after speaker pointed out the tremendous loss to the national economy on account of the non-utilisation of half of its human resources in terms of the contribution of women to national productivity and that only education can rescue the women who are neglected and ill-equipped to participate in the development process of the home and society at large. This report is also published.

Field Study

In order to accelerate the process of change in social attitudes regarding women by deliberate and

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*enior Fellow, Department of Historical Studies,
Mother Teresa Women's University,
Kodaikanal-624102*

planned efforts, a proper data base relating to the Status of Women and constraints that stand in the way of the advancement of women is an essential prerequisite. Hence a study has been undertaken by our University in collaboration with the Tamil Nadu Corporation for Women's Development, Madras. The data covered includes :

1. Demographic Structure,
2. Education Levels and Imbalances,
3. Education Infrastructure,
4. Employment Status,
5. Earning Levels,
6. Health Infrastructure and availability of health services,
7. Family Welfare programmes and level of participation,
8. Welfare programme for women and their impact,
9. Role of Women in the Political Processes, and
10. Legal Status.

Courses

The University aims at concentrating only on research offering M. Phil and Ph.D. both part time and full time programmes.

M. Phil. Sequential Programme

Women Scholars were admitted for the Sequential Programme in the following eight disciplines relating to Women's Studies :

1. Economics,
2. Education,
3. English,
4. Family Life Management,
5. Historical Studies,
6. Psychology,
7. Sociology; and,
8. Tamil.

Broadly the topics chosen for their Dessertation are need based programmes towards the uplift of Women.

To meet the needs of the scholars all over South India, University has selected a few Women Resource persons working in various universities and colleges besides the faculty members.

Regular Programme

Regular M. Phil Courses started since March, 198 in the following disciplines:

1. Economics,
2. Education,
3. English,
4. Historical Studies,
5. Sociology, and
6. Tamil.

Faculties

The faculties of Tamil with Dr. Devadatta as Head, Historical Studies with Dr. Suryakumari, and Education with Dr. Josephine Louis started to function from July, 1985. The strength of these Departments was increased by appointing one Reader, six Lecturers, eight Research Assistants Lecturers and Research Assistants were also appointed in the Department of Economics, English, Sociology.

Library

The main infrastructure of the University—the Library is well established. There are around 30,000 books on Research Methodology and Women's Studies along with many Indian and foreign journals on Women.

Extension Centre

To extend the activities of the University, an Extension Centre has already started functioning in Madras while another Extension Centre at Nagercoil was inaugurated on 30th March '87 at Sivanthi Aditanar College, Nagercoil by the Vice-Chanceller Prof. (Smt.) K. Vasanthi Devi.

Women Cells

Our University Extenion Centres are being instituted at the various universities of Tamil Nadu with a view to collaborate with the women academicians and mobilise all possible resources and put them to optimum use for the benefit of women of all levels, all over Tamil Nadu and spread further also, if possible. In due course this University will develop into, only a National University but also an International one, serving the cause of women all over the world.

Welfare Schemes

A 'Health Cell' has been instituted at Madras to report on the health status of the rural women of Tamil Nadu.

A 'Legal Cell' is functioning for the pupose of reporting the legal status of our women all over.

Computer Centres as Extension Services towards the welfare of women are being opened at Madras, and Kodaikanal with the objective of enabling deserving women to attain economic emancipation.

Departmental Activities

Tamil Seminar was held at the premises of Madurai Kamaraj University in 1986. The theme of the Seminar was "Women in Women's Writings". The objective of the seminar was to evaluate the writing of contemporary writers especially novelists in Tamil and find out how far they succeed in depicting the problems of women and the solutions, as well as their Contemporary social and economic status in a realistic way in their work. The proceedings are published.

A workshop on "Development of Women Through Education" was held in April 1986. Papers were presented by veterans in the fields of Education—Formal and None-Formal, Psychology, Sociology, Economics, Law and Liberation of Women, all relating to the Development of Women. The proceedings are published.

A Seminar on "Uplift of Women in South India in 20th Century and Suggestions for 2000 A.D." was convened by the Department of Historical Studies in Sri Avinashilingam Home Science College, Coimbatore in September 1986. Eminent Professors and Scholars presented papers on various dimensions of uplift of Women Region-wise: Tamil Nadu, Kerala, Karnataka, and Andhra, and aspect wise: Social, Economic, Education, Psychology, Literary and Women's Organisations. Suggestions for 2000 A.D. were contemplated also on the same lines. The proceedings are published.

A 'Short term Foundation Course' for the research scholars was conducted at Madurai Kamaraj University from 24.11.1986 to 30.11.86.

On 27.3.87 a one day workshop was held at Srinivasa Hall in Madras to find out the areas of research for M.Phil, Ph.D., and Projects in Tamil Literature through the ages.

On 31.3.87 and on 1.4.87 the Department conducted a Seminar at Vivekananda Kendra, Kanyakumari on "Mass Media & Women's Development".

Realising the need to inculcate self confidence and leadership qualities among the school and college-going students, One-day workshops were organised by the Education Department at Coimbatore, Dindigul, Salem and Trichy. Professors, teachers, and B.Ed. students participated and made the workshops a rewarding experience. The Department also organised a workshop for the animators of adult education collaborating with Madurai Multi-purpose social service organization in March at Sacred Heart Colllege, Shenbaganur, Kodaikanal and at Jeyaraj Annapackiam College for Women, Periyakunam.

Convocation

The first convocation was held on 14th April, 1987 in the University campus. M.Phil Degrees were conferred on 30 scholars of various disciplines by the Vice-Chancellor, Prof. (Smt.) K. Vasanthi Devi.

On-going Projects

The University has undertaken various projects. The Thematic Projects would provide basic information on women of walks of life for future action oriented researches. The other projects are to find out the problems of women and also to suggest programmes to be implemented to uplift them. The Projects are as follows :

1. Biographical Dictionary of South Indian Women
2. A study on the status of women in Kodaikanal
3. Position and status of women and their problems as depicted in the women's magazines (Pre-Independence period)
4. Compendium of short stories in Tamil on women's studies
5. Directory of Information
6. Problems of women head-leaders in and around, Kodaikanal
7. Creative literature in Tamil
8. Analysis of dowry practices prevalent among various communities in Nagercoil
9. Female drop-outs in Kodaikanal
10. Content analysis of school textbooks
11. Women and superstitions in Tamil Nadu
12. The status of women stone-cutters, Kodaikanal
13. Female agricultural labourers in and around Kodaikanal
14. Gender bias and language discrimination in the textbooks of undergraduate courses in Tamil Nadu. □

Rich Nation Poor People

Notwithstanding Green Revolution, White Revolution and Blue Revolution, India continues to be a rich nation with poor people, said Hon'ble R. Venkataraman, the then Vice-President of India while delivering the Convocation Address at the Seventeenth Convocation of Gauhati University. He ascribed it to the Crisis of Numbers and the Crisis of Confidence. While the former has nullified all progress, the latter sets in a sense of despondence that we do not realise the value and potential of what we have achieved. Mr. Venkataraman invited the younger generation to join in a Revolution of Skills in which there is an untiring pursuit of higher and ever higher standards. Excerpts :

Convocation

If one were to study the themes that occupied early Assamese Literature, one would find that Sankara Deva, for instance, served a purpose of great contemporary relevance in his time, Sankara Deva in many ways paralleled his Illustrious contemporary the legendary Chaitanya. Like Chaitanya, Sankara Deva traversed the length and breadth of India, visiting during his peregrinations, Gaya, Kasi, Puri, Mathura, Kurukshetra, Pushkara, Dvaraka and Rameswaram. He disseminated the Vaishnava faith of his time in a manner that was altogether remarkable for its mass appeal.

The nineteenth century also saw in Assam a coming together of 'man' and 'moment'. In 1853, a great demonstration of nationalist pride was made by the people of Assam. Assam's Diwan Maniram Dutta memorialised the British Government in 1853, pointing out :

> In the Shastras it is written, that rulers ought to practice righteousness and govern their subjects with justice while studying their welfare. These are not now done, but the very contrary; and for such sins and negligences, due rewards will be meted out even in a frontier state. Maniram demanded the restoration of the former native administration.

But the appeal was turned down. That was the time when the First War of Independence was about to be waged. Maniram was in Calcutta when the Revolt of 1857 actually broke out and he resolved to throw in his lot with the rebels. Dr. Tara Chand, the historian tells us :

> Assam was combed out for patriots. Maniram and Piali Barua were tried and hanged together on February 26, 1858. The others were sentenced to various terms of imprisonment—Faith and pride in our heritage and a willingness to sacrifice all for it : Such is the story of Assam, such the saga of its soul.

Centuries later, in modern times this spirit of patriotism was kindled by the redoutable writer and founder of modern Assamese literature. Lakshinath Bezbaroa. It has in fact been said that the mere mention of Bezbaroa's name was akin to "raising the national flag". Similarly, Tarun Ram Phookan, N.C. Bardoloi and 'Lokapriya' Gopinath Bardoloi brought their great patriotism and dedication to the cause of the national movement. For them love of the province was inseparable from their love of India. One strengthened and was strengthened by the other.

Gandhiji's Non-Cooperation Movement also attained great heights in Assam in the year 1920-1921. The tea gardens of Surma Valley, Darrang and Sibsager districts hummed with memorable activity in that year. Historian Sumit Sarkar tells us :

> The 1921 days left a deep impression on Assamese literature through the poetry of 'Assam-Kesari' Ambikagiri Roychaudhuri, as well as numerous folksongs where 'Gandhi-Raja' was substituted for Krishna in Vaishnava lyrics. The Civil Disobedience Movement of 1930-31 similarly saw great valour being displayed in the State, with Sylhet (then a district of Assam) becoming the main base of the movement.

The Quit India Movement of 1942 saw Assam once again playing an exemplary role, Gopinath Bardoloi being arrested on his way back to Guwahati from Bombay and being sentenced to a long imprisonment which shattered his health but not his national pride.

If the Quit India movement of 1942 galvanized the whole nation, it was not just because of the immediate appeal of political independence. There was a long-term socio-economic dimension to the movement also.

It gave India a glimpse of the great transformation that lay ahead, beyond Independence for India as a whole. Describing this aim in his memorable speech at Bombay, Gandhiji said : "The lustre is to be put into lustreless eyes". This was to be done both politically and economically. Politically, it meant the giving to our people a sense of belonging and of participation. Economically it meant eradication of poverty, disease and despair.

None saw this as clearly as Jawaharlal Nehru. It was only natural that when history placed Jawaharlal Nehru at the helm of the new nation State, he should have regarded the opportunity as a 'tryst with destiny'. Looking upon Parliament as the agency that would secure political democracy, he set up the Planning Commission as the agency that would secure an economic democracy. The first plan's stress was on agriculture. In the Second Plan, it was industry's turn to receive priority. We have now travelled a long way on the road of development. We rightly derive satisfaction from the fact that we are now self-sufficient in food, and are one of the industrialized nations in the world. These two accomplishments of ours have instilled hopes of similar growth among the developing countries elsewhere in Asia and Africa.

And yet the fact remains that, notwithstanding these accomplishments, notwithstanding the famed Green Revolution, the White Revolution (which has revolutionized dairying) and the Blue Revolution (which has modernized fisheries) India continues to be a rich nation with poor people.

One immediately recognizable reason for this is, of course, the remorseless increase in our population. The rise in numbers from 360 million to near 800 million in forty years is so great that it nullifies all progress, obliging the nation to run in order to remain in the same place.

But apart from the crisis of numbers there is in my view another more vital crisis. This can, I think, be described as a crisis of confidence. We are all too conscious of our deficiencies. But we do not seem to fully realise the value and the potential of what we have achieved.

India is equal to Europe excluding Russia in size. This part of Europe is artificially striving to achieve economic viability through the concept of the European Economic Community. Our resources are, of course, as unevenly distributed as in Europe. Our deposits of coal, iron ore, manganese, copper and bauxite, for instance, are concentrated in a small sector of Bihar, West Bengal, Madhya Pradesh and Orissa. Gypsum, lead and zinc occur only in Rajasthan. But our steel plants, cement factories and other industrial establishments using these resources dot the entire nation. This has been rendered possible because of the free movement of goods and commodities from one part of the country to another. In short, we are an economic community and we are able to share and utilise the wealth of one part of the country in every other part. We have our pluses and minuses but these balance out at the national level. Mutuality compensates disparities.

In the early years of our Republic States' representatives used to urge on the Centre to correct the regional imbalance and promote balanced regional development. The objective of planning in India is not only to utilise the resources to maximum advantage

Recent Publications

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2. Bibliography of Doctoral Dissertations in Social Sciences & Humanities 1983-84 : Rs. 180.00
3. Educational Statistics at a Glance : Rs. 75.00
4. Education and Economic Development : Rs. 25.00

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but to bring about balanced regional development so that the devil does not take the hindmost. It should be said to the credit of the planning process in India that a lot has been achieved in this direction though in view of size, population and utter backwardness of certain regions a lot more remains to be done. States which are backward have therefore much to gain from the centralised planning than the comparatively developed states in the country.

It would be difficult for those without broad vision to understand the value and importance of equitable sharing of national wealth. But those who have had the benefit of higher education should be able to see this. They must do so in their own interest, as well as in the interest of the region and the nation.

One resource of which their is an even spread throughout India, is the resource of real and potential skills. I had occasion soon after the Allied Victory, to visit warravaged Germany. That nation lay then in shambles. Visiting it again a decade later I was struck by the marvellous change that had come over the place. Factories had sprung up, Housing and constructions were scraping the sky—fountains and parks studded the cities. During my discussion with the Industrialists in Germany, I asked how it was possible for them to rebuild all their factories within the short time. The answer was that though the enemies destroyed the factories, they could not destroy their skill. With that skill, they were able to put up all the new factories. While war brought death, desolation and despair, it sharpened their wits and skills, so that they were able to improve their manufacturing processes. Japan, which is a country that has virtually no natural resources of its own has marched into the front rank among industrialised nations by their skills.

I would like to put it to the dynamic younger generation of Assam—and indeed of our country—to become the agents of a revolution of skills, in which there is an untiring pursuit of higher and ever higher standards. As I said a little while ago, we enjoy a variety of resources within our single politico-economic structure. If we husband our resources with the efficiency and skills of countries like Germany and Japan we could achieve a place in the front rank of advanced nations. □

Academic Staff Colleges

(*Continued from page 6*)

11. D.S. Madan, Consultant on Human Resource Development, has rightly pointed out :

> "People believe in what the seniors do and what the seniors say. Self example is the best method to change behaviour. Lectures can dramatize, explain, summarise, highlight and ring the gong. Great lectures can change attitudes and opinions but action training will increasingly substitute lecture to change behaviour."[11].

Several such valuable and radical ideas should be discovered and made use of in orienting the new entrants to the college and university teaching cadres. □

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Management Development Course for Women Entrepreneurs

The Department of Education Management of the S.N.D.T. Women's University, in collaboration with the Ministry of Human Resource Development (Department of Women & Child Development) and United States Agency of International Development, organised a two weeks' residential training programme on 'Management Development for Women Entrepreneurs. The objectives of the Programme were to (i) to strengthen their entreprenurial qualities of risk taking and achievement motivation; (ii) to analyse the environment related to small industry and business; (iii) to understand the process and procedure of setting up of small enterprises; and (iv) to strengthen selected managerial skills.

The programme was specially designed for promoting entrepreneurship among women and the course contents included :

(a) Business environment for the entrepreneur ;

(b) Personal Effectiveness, Self Awareness and Interpersonal Skills; Factors affecting the entrepreneurial role; Effective Communication Skills, Achievement Motivation;

(c) Technical Communication e.g. Project Formulation, Feasibility Report, etc.;

(d) Establishing an Enterpriseproblems — information sources/schemes of assistance, etc.; and

(e) Management Techniques; Finance Management ; Purchase Techniques and Costing; Marketing Management; Production Management; Personnel Management; Labour Law Application, etc.

Over twenty candidates, selected through an interview, participated in the programme.

Summer Workshop in Political Science at B.H.U.

The Department of Political Science, BHU, organized a Workshop on Advanced Course in Research Methodology and teaching of Political Science and Public Administration for the teachers of universities and colleges of U.P., Bihar and Orissa. Prof. S. C. Dubey, former Vice-Chancellor of Jammu University, inaugurated the workshop.

Sponsored by UGC, the Workshop was in the nature of refresher course designed to acquaint the teachers and scholars of political science with latest developments in the field of research methodology as well as in the discipline of Political Science. It was conducted on inter-disciplinary lines. The conduct of research methodology course was largely assigned to experts from sister-disciplines of social sciences, whereas the course on recent advances in Political Science and Public Administration was conducted by Political Scientists drawn from 23 universities in 11 States.

Dr. Vibhuti Narain Singh, the Chancellor of B.H.U. and Ex-maharaja of Banaras delivered the valedictory address and gave away the certificates to participants. He said that emphasis should have been put in the Workshop on the study of ancient Indian Political thinkers specially Kautilya and Shukracharya.

MSc in Clinical Epidemiology

A master's degree course in clinical epidemiology is to be introdued shortly in Madras. The syllabus has been prepared and sent to the Madras University for approval. This was revealed by Dr. R. Prabhakar, Director, Indian Council of Medical Research (ICMR)'s Tuberculosis Research Centre while speaking at the inaugural function of a three-day workshop on "Clinical of epidemiology" organised by the ICMR-sponsored Advanced Centre for Clinical Epidemiology Research and Training (ACCERT) in Madras recently.

Dr. (Mrs.) Lalitha Kameswaran, Director of Medical Education, who inaugurated the workshop, said clinical epidemiology was only complementary to clinical and basic sciences of medicine. It should form an integral part of teaching and learning in every discipline of medicine.

Clinical epidemiology, a basic science derived from the synthesis of the skills of clinical medicine and epidemiology, reached beyond patient care, to clinical and community-based research and to the methodology of implementation and evaluation of health-care programmes. It gave knowledge on how to make the best use of available medical literature and decide critically the value of the research works published.

15 Rural Universities Planned

The Central Government proposes to set up 15 universities on the pattern of the Gandhigram Rural

Institute (Deemed University) in various parts of the country in the next two or three years. A sum of Rs. 75 crores has been allocated for it and the initial provision would be Rs. 10 crores. This was disclosed by Dr. M. Aram, Member, University Grants Commission and the convener, Working Group on Rural Universities, U.G.C. in Madurai recently.

Gujarat Vidyapith Offers South Indian Languages

The Gujarat Vidyapith is reported to have introduced teaching of two south Indian languages—Kannada and Malayalam—as voluntary subjects from the current academic term. According to the Vice-Chancellor of the Vidyapith, Prof. Ramlal Parikh, the students taking these languages would be able to take their master's degrees in literature.

The Vidyapith was also planning to teach Sindhi and Assamese from the next year and a two-year master's degree course in Rural Management and Home Science from the current term.

Academic Staff College for AMU

The University Grants Commission (UGC) has approved the setting up of an Academic Staff College at the Aligarh Muslim University (AMU). This will be the only College in Uttar Pradesh to impart training to the members of the teaching staff attached to 13 Universities and their affiliated colleges besides the A.M.U. in the State. The aim of the College is to appraise the members of the new techniques as well as the new education policy. About 50-60 participants, from lecturers to the chairmen of the departments, will take part in each batch. The training will be of two months duration.

News from Agril. Varsities

Inter-State Youth Exchange Programme

Under the Youth Agriculure Exchange Programme sponsored by the Nehru Yuva Kendra Sangathan, New Delhi, more than 800 farmers from Uttar Pradesh, Rajasthan and Himachal Pradesh visited Punjab during the months of June and July to learn latest farm technology. While presiding over the concluding function of the tour-cum-training programme for the youth of other States in Punjab, Dr Sukhdev Singh, Vice-Chancellor of the Punjab Agricultural University (PAU) said that India was a big country and in spite of diverse cultural background, languages and traditions it was united as a nation. He observed that meeting people of other States enhanced knowledge and widened the outlook. He said that the experience gained by the youth during their one month stay with the farming families will enrich their knowledge and would help improve their agriculture. He further said that Punjab had witnessed a big break-through in the production of foodgrains by adopting new farm technology whereas Himachal Pradesh excelled in apple cultivation.

Dr Khem Singh Gill, Director of Extension Education of the PAU said that the use of latest farm technology including improved seeds, fertilizers, insecticides, irrigation and use of farm machinery was responsible for increased farm production. Dr Gill urged the visiting young farmers to take dairying poultry farming to boost their income. He hoped that this tour and their stay in farming families would up-date their knowledge about Punjab agriculture and also promote national integration.

Each batch of the youth on their arrival at Chandigarh, was given orientation by the State Directorate of Agriculture, for one day. From there they were allocated to stay with the selected families of various districts of Punjab for 7 to 8 days. During their stay they worked with their host families and learnt the Punjab agriculture. After this they were given two days' comprehensive field training on the PAU Campus in the cultivation of wheat, rice, pulses, oilseeds, etc. They were also educated about the management of dairy and poultry farming, bee-keeping, vegetable production and fruit crops.

While giving their impressions, the visiting youth were all praise for the hospitality of the Punjab farmers and their devotion to their profession. They noted that mechanisation helped in timely performing varions farm operations. At the same time they were receptive in readily adopting the new farm technology. They found that there was a quick system of the transfer of farm technology at the doorsteps of the farmers through the Directorate of Extension Education of PAU.

We Congratulate....

1. **Dr. K. R. Pawar who has taken over as Vice-Chancellor of the Marathwada Agricultural University, Parbhani.**

News from UGC

INSAT-1B Programme of UGC

Between 21st to 31st August, 1987 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV Network throughout the country. For the viewers in Delhi and surrounding areas these programmes can be seen on the second channel.

21.8.87

“Time Without End II”
“The Farthest Frontier”
“Warning Signal”

22.8.87

“Introduction to Indian Music I”
“The Art of Cartooning I”
“Yakshagana”

23.8.87

No Telecast

24.8.87

“Pelletron-3”
“Energy And Rockets”
“Ohms Law”

25.8.87

“Economics Today—Pattiya Pola-Energy for the Poorest”
“Hotel Management III”
“Smoke Jumpers”

26.8.87

“Out of the Past III’
“Environment Shapes National Culture-Hyacinth”
“The Things which Walk Without Feet”

27.8.87

“Drifting Continents”
“Earthquakes”
“A Volcano is Born”

28.8.87

“Interplanetary Scintillation Project”
“Satellite Application for Earth Science”

29.8.87

“Introduction to Indian Music II”
“The Art of Cartooning II”
“Secret of Stradivarius”

30.8.87

No Telecast

31.8.87

“Pelletron 4”
“Airplanes-Principles”
“University Round-Up”

No Change in Minimum Qualifications

The University Grants Commission (UGC) has clarified that the minimum qualifications prescribed for recruitment to the posts of Professors and Readers in the universities under the UGC Act of 1956 will continue to remain unchanged consequent upon the revision of pay scales of teachers announced by the Government of India on June 17, 1987.

These qualifications prescribe that for the post of Professor, a candidate (a) should be an eminent scholar with published work of high quality, actively engaged in research with about 10 years' experience in teaching and/or research and have experience in guiding research at doctoral level or (b) he should be an outstanding scholar with established reputation and who has made significant contribution to knowledge.

For the post of Reader, a candidate should have good academic record with a doctoral degree or equivalent published work. He should also be actively engaged in (i) research or (ii) innovation in teaching methods; or (iii) production of teaching materials. He should have about five years' experience of teaching and/or research provided that atleast three of these years as a Lecturer or in an equivalent position.

Those Lecturers (including Lecturer (Sr. Scale) and Lecturer (Spl. grade) and Readers who fulfil the above mentioned minimum qualifications would be eligible to apply for the higher posts (Readers and Professors) in the revised scales through all India advertisement and selection for their career advancement. In principle, therefore, it is possible for any bright creative academic to become a Professors in 10 years.

Shortly Releasing

1. Handbook of Medical Education-1987
2. New Technologies in Higher Education
3. Studies in Distance Education

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AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

CURRENT DOCUMENTATION IN EDUCATION

A List of Select Articles Culled from Periodicals received in AIU Library during July, 1987.

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TEACHERS & TEACHING

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EDUCATIONAL TECHNOLOGY

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ECONOMICS OF EDUCATION

Horstman, Nancy J. Crocker. The financing of education in England. *Comp Edn Rev* 31(2), 1987, 260-72.

Kasinath, H.M. Working of teacher education college finances : A case study. *Indian Ednl Rev* 22(2), 1987, 9-18.

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Tight, Malcolm. The value of higher education : Full-time or part-time ? *Studies Hr Edn* 12(2), 1987, 169-85.

Watts, A.G. Beyond unemployment ? Schools and the future of work. *British J Ednl Studies* 35(1), 1987, 3-17.

PROFESSIONAL EDUCATION

SPECIAL AND Liberally funded : The Indian Institutes of Technology. *ABCD* (79), 1987, 17-22.

Tyler, R.W. Distinctive attributes of education for the professions. *New Frontiers Edn* 17(1), 1987, 13-22.

Usher, Robin S and Bryant, Ian. Re-examining the theory-practice relationship in continuing professional education. *Studies Hr Edn* 12 (2), 1987, 201-12.

ADULT EDUCATION

Draper, James A. Universities and the challenge of illiteracy. *Indian J Adult Edn* 48(1), 1987, 57-66.

Heimer, Muriel Kay. The community college : Opportunity, accessibility, excellence. *New Frontiers Edn* 17(1), 1987, 73-80.

Lalor, Gerald C. Distance teaching in the University of the West Indies *ABCD* (79), 1987, 2-5.

Paulet, Robert. Distance education counselling. *Indian J Adult Edn.* 48(1), 1987, 33-40.

Srinivasacharyulu, G. Continuing education in Indian Universities. *Indian Ednl Rev* 22(1), 1987, 65-73.

Tarlok Singh. New education policy and eradication of illiteracy. *Indian J Adult Edn* 48(1), 1987, 43-6.

COMPARATIVE EDUCATION & COUNTRY STUDIES

HIGHER EDUCATION in Britain : The Government's White Paper. *ABCD* (79) 1987, 13-5.

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THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Biochemistry

1. Ashok Kumar. *Studies on phosphoglycerate kinase of germinating mung beans, Vigna radiata.* BHU.

2. Sanjenbam Kunjeshwari Devi. *Biochemical studies of Kundalini Yoga in health and disease.* BHU.

Microbiology

1. Bodhankar, Mukund Govindrao. *Optimization of biogas production from water hyacinth under controlled environmental conditions.* Shivaji.
2. Gandhi, Mohanlal Bansilal. *Taxonomic studies of root nodule bacteria from wild leguminous plants.* Shivaji.

Botany

1. Amarjit Kaur. *Studies on the reproductive biology of some homosporous ferns from Himalaya.* Panjab.

2. Banik, Bandana. *Studies on cellulolytic activity of thermotolerant fungus.* Calcutta.

3. Dhora, Manohar Atmaram. *Flora of Amravati District with special reference to the distribution of tree species.* Nagpur.

4. Dubey, Ramesh Chandra. *Biology of rhizosphere microfungi of soybean with emphasis on root rot caused by Macrophomina phaseolina (Tassi) Goid.* BHU.

5. Ghosh, Kartik. *Limnology of some aquatic ecosystems with special reference to microbes and benthos.* HS Gour.

6. Joshi, Gunwant R. *Diurnal studies of physico-chemical properties of limnological importance.* HS Gour.

7. Kakkar, Meenakshi. *Growth and morphogenesis in Neptunia oleracea : A tropical aquatic legume.* Delhi.

8. Khandelwal, Sharda. *Further studies on morphology, biochemistry, cytology and fine structure of spores of Ophioglossum Linn.* Jiwaji.

9. Krishna Kumar, M. *Studies on salt tolerance and utility aspects of Salvadora persica Linn.* Bhavnagar.

10. Madan Lal. *Studies on sex modification and sex associated biochemical differences in some flowering plants.* BHU.

11. Mohd. Sikandar. *Ecology of River Ganga in Varanasi with special reference to pollution.* BHU.

12. Mukhopadhyay, Suman. *Analysis of differential segments of chromosomes and DNA estimation in different genera of leguminosae.* Calcutta.

13. Naugaria, Mahendranath. *Population ecology of Atylosia scarabaeoids in the rangelands of Jhansi, U.P.* Bundelkhand.

14. Sastry, Pathukuchi Subramanya. *Nutritional and heavy metal studies on Closterium moniliferum (Bory) Ehrenb.* BHU.

15. Sharma, Shanti Swarup. *Cytotaxonomy and reproductive biology of some W. Himalayan ferns.* Panjab.

16. Siddiqui, Kamal Ahamad. *Eco-Physiological studies on Eclipta alba Hassk and Dactyloctenium aegyptium (L) Beauv.* BHU.

17. Singh, Ajit Kumar, *Studies on the angiospermic flora of Giridih District.* Magadh.

18. Sreenivasa Rao, Kottapalli. *Ecophysiological attributes of bamboo forests in successional communities in North Eastern India.* NEHU.

19. Srivastava, Suresh Chandra. *Effect of heavy metals on rhizobia.* BHU.

20. Verma, Akhila Nand. *Studies on the physiology and biochemistry of seed germination of some forests trees of North East India.* NEHU.

21. Yumnam, Dilrani Devi. *Physiological studies on spores (akinetes) of the blue-green alga, Nodularia spumigena.* NEHU.

Zoology

1. Babu, Bandaru Suri. *Ecological studies on odonate larvae and their role in the biological control.* HS Gour.

2. Bhaskar, Kolachana Satyanarayana. *Some studies on the endocrine physiology of the male palm squirrel. Funambulus pennanti Wroughton with special reference to antiandrogen treatment.* BHU.

3. Chaubey, Ramesh Chandra. *Micronucleated erythrocytes as a measure of somatic chromosomal damage in mice.* BHU.

4. Cheong Nge. *Evolutionary divergence in Indian pygmy mice : Cytogenetics, habitat and behaviour studies.* BHU.

5. Hardeep Kaur. *Certain aspects of orientation, feeding and ovipositional responses of the cotton leafhopper, Amrasca devastans (Distant) in relation to the potential for their manipulation for the pest management.* Delhi.

6. Madan Neelu. *Effect of photoperiod and sex hormone on hypothalamo-hypophyseal axis during seasonal reproduction and sexual maturation in the male Indian weaver bird, Ploceus philippinus.* Delhi.

7. Mahapatro, Bijay Kumar. *Growth, ecology and metamorphosis of a tropical amphibia, Bufo stomticus, Lutken.* Sambalpur.

8. Naik, Prakash R. *Effect of permethrin on consumption and utilization of food and water in Bombyx mori L and Philosamia ricini Hutt.* Bangalore.

9. Pandey, Rakesh Kumar. *Studies on the gonads of a fresh water teleost, Mystus Vittatus (L) under the stress of an agrochemical NPK.* Gorakhpur.

10. Sherekar, Prabha Yeshwant. *Some physiological aspects of the fish, Channa orientalis (SCH) exposed to pollutants.* Amravati.

11. Shrivastava, Vinay Kr. *Reproductive and endocrine physiology of the female palm squirrel. Funambulus pennanti Wroughton in response to flutamide, cyproterone acetate and cadmium chloride treatment.* BHU.

12. Singh, Suman Kumar. *Histochemistry of epidermis of certain carps.* BHU.

13. Srivastava, Rajesh Kr. *Cyclic spermatogenesis in common Indian frog, Rana tigrina : A study.* BHU.

14. Subba Rao, Rallabandi. *Limnological studies of fresh water ponds around Chipurupalli, Vizianagaram District, Andhra Pradesh.* Andhra.

15. Suresh Chandra. *Studies on ecology of phthiraptera of common myna, Acridotheres tristis and various organ systems of Menacenthus eurysternus (Phthiraptera : Amblycera).* BHU.

16. Thakur, Manohar Singh. *Studies on the saccus-vasculosus of some fishes.* HS Gour.

Medical Sciences

1. Pathak, Anupam Kumar. *Phytochemical and pharmacological studies of medicinal plants of compositae.* HS Gour.

2. Rama Devi, G. *The role of prostaglandins in altering the genetic damage induced by diphenylhydantion : An antiepileptic drug and gamma radiation.* Osmania.

3. Sahu, Manoranjan. *Cancer and its management by ayurvedic drugs.* BHU.

4. Singh, Arun Kumar. *Role of various forms of pratisaraniyakshara in ano-rectal disorders.* BHU.

5. Udupa, Nayanabhirama. *Physicochemical and stability studies of certain drugs.* BHU.

Agriculture

1. Dubey, Suresh Kumar. *Response of rice varieties to different levels, sources and methods of nitrogen application.* JN Krishi.

2. Dwivedi, Narendra Narayan. *Effect of rhizobium inoculation and phosphorus application on growth, yield and quality of cowpea, Vigna Unguiculata (L) Walp. CV. P-barsati.* BHU.

3. Jagan Mohan Rao, Neelagiri. *Genetic analysis of yield and other quantitative traits of economic importance in maize, Zea mays L.* BHU.

4. Kabu, Kanya Lal. *Biochemical studies in apple, Malus domestica Borkh, cv. starking delicious, in relation to maturity and ripening.* YS Parmar.

5. Mahinder Singh. *Genetic analysis in relation to genetic divergence in upland cotton, Gossypium hirsutum L.* PAU.

6. Pandit, Rajinder Paul. *Cold storage behaviour of starking delicious apple in relation to pre and post harvest treatments.* YS Parmar.

7. Prasad, Shiva Dayal. *Studies on the effect of soil moisture stress at different stages of growth under varying nitrogen levels on the development, yield and quality of rabi hybrid maize.* Rajendra Agrl.

8. Salwinder Singh. *Studies on male sterility in pearl millet.* PAU.

9. Singh, Maibam Rohini Kumar. *Studies on male sterility and heterosis breeding in rice, Oryza sativa L.* Birsa Agrl.

10. Singh, Sarveshwar Pd. *Studies on the response of hybrid maize, Zea mays L to application of zinc and manganese in alluvial soil of Varanasi.* BHU.

11. Verma, Kanhaiya Lal. *Evaluation of soybean varieties in relation to planting dates and fertility levels.* JN Krishi.

Veterinary Science

1. Choudhary, Suresh Pd. *Studies on dynamics of contamination of raw pork with Clostridium perfingens type A and diarrhoea, food poisoning due to it.* Birsa Agrl.

2. Deshmukh, Arun Babarao. *Effect of pre and post-partum feeding management on body weight changes, some blood and milk parameters and reproductive performance on murrah buffaloes.* HAU.

3. Gupta, Rajan. *Biological evaluation processing and utilisation of Kosum (Schleichera oleosa) cakes on the performance of livestock and poultry as a protein supplement.* Birsa Agrl.

4. Hundal, Ranbir Singh. *Effect of different extenders on acrosomal hyaluronidase and acrosin in buffalo, Bubalus bubalis semen after deep freezing.* PAU.

5. Poulose, M.V. *Genetic studies on sex-linked recessive dwarfing gens dw on juvenile body weight of dwarf and cross bred broilers.* JN Krishi.

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UNIVERSITY GRANTS COMMISSION

BAHADUR SHAH ZAFAR MARG, NEW DELHI

Applications are invited for filling up the posts of **Junior Stenographers** (English) in the University Grants Commission, New Delhi.

Number of Vacancies : 17 (Including Posts reserved for SC/ST candidates).

Age Limit : 25 years. 30 years for Scheduled Caste/Scheduled Tribe candidates. Also relaxable for employees of Central and State Governments, Universities and Autonomous organisations upto 35 years as on 1-1-1987.

Qualification : Matriculation of equivalent.

Scale of Pay : Rs. 1200-30-1560-EB-40-2040 plus usual allowances as admissible to the Central Government employees of similar status stationed in Delhi/New Delhi.

Retirement benefits in the shape of Pension-cum-gratuity-cum-GPF-cum-gratuity are available to the employees of the Commission. The employees are also entitled to the benefit of CGHS and allotment of residential accommodation in the General Pool of the Govt. of India in their turn. The employees of UGC are also eligible for L.I.C. Group Insurance Scheme.

The recruitment to the post of Junior Stenographer (English) will made through Written examination/shorthand test/interview. The scheme of examination/tests/interview will be as under :

Part-I : Written Examination : The subjects of the examination, the time allowed and the maximum marks for each subject shall be as given below :-

Paper	Subjeet	Time allowed	Max. Marks
I	General English	1½ hours	150
II	General Knowledge	1½ hours	150

The candidates shall write the papers in their own hand. In no circumstances, shall they be allowed the help of ascribe to write the answers for them. The candidates are allowed the option to answer the whole of paper II in Hindi (Devnagri Script) or in English.

Part II : Shorthand Test : This part shall comprise of two stenography tests of dictation in English, at a speed of 80 w.p.m., 100 w.p.m., respectively as follows:

(a) The first dictation test shall be for a maximum of 150 marks. The test shall consist of a stenograshy test of dictation in English at a speed of 80 w.p.m. for ten minutes. This will be required to be transcribed in 60 minutes.

(b) The second dictation test shall also be for a maximum of 150 marks. This test shall consist of a stenography test of dictation in English at a speed of 100 w.p.m. for ten minutes. This will be required to transcribed the passage in 50 minutes.

Candidates who qualify in either of the two tests, namely at 80 w.p.m. or 100 w.p.m. will be deemed to have qualified in the shorthand test. The final marks in part II will be the total of the marks obtained in the two tests.

Note : Candidate desirous of exercising the option to answer aforesaid paper, General Knowledge in Hindi shall indicate their intention to do so in the application form, otherwise it will be presumed that they would answer the paper in English. The option once exercised shall be treated as final and no request for change shall be entertained later on.

Part III : Personality Test (Interview) : 100 marks

Note : 1. The candidature of a person who is admitted to the examination shall be cancelled, if after submitting his application he resigns from the service or post or his services are terminated by the Government either before or after taking the examinations. He shall however, continue to be eligible if he is retrenched from the service or post after submitting his application. 2. The U.G.C. shall decide the eligibility or otherwise of a candidate for admission to the examination and no candidate to whom a certificate of admission has not been issued by the U.G.C. shall be admitted to the examination. 3. Success at the examination shall confer no right to appointment to the post of Junior Stenographer in the U.G.C. unless the Commission is. after such enquiry as may be considered necessary, satisfied that a candidate is suitable in all respects for appointment in public service. 4. The U.G.C. shall have discretion to fix the qualifying marks in any or all the subjects or any part of the examination. Only those candidates who attain a minimum standard in each paper in Part I of the examination shall be eligible to take the shorthand test under Part II of the scheme of examination. 5. Any attempt on the part of a candidate to canvass support for his candidature by any means shall disqualify him for admission to the examination. 6. A candidate who has been declared by the U.G.C. guilty of impersonation or of submitting fabricated document or documents which have been tampered with or of making statements which are incorrect or false or of suppressing material information or otherwise resorting to any other irregular or improper means for obtaining admission to the examination or of using or attempting to use unfair means in the examination hall or of misbehaving in the examination hall, may in addition to rendering himself liable to criminal prosecution.

(a) be debarred permanently or for a specified period : (i) by the U.G.C. from admission to any examination or from appearance at any interview held by the Commission for selection of candidates; (ii) by the Central Government from employment under that Government.

(b) be liable to disciplinary action under appropriate rules, if he is already in service under the Central Government.

Documents to be attached with Application : 1. Two identical copies of recent passport size photographs. 2. One self-addressed post card. 3. Two self-addressed unstamped envelopes of 10cm x 22cm size. 4. Two slips indicating name and postal address. 5. Documents in favour of claim of SC/ST/Physically handicapped/Ex-servicemen etc. 6. Attested copies of certificates regarding qualifications.

Closing Date : Complete application in the prescribed form should reach the **Secretary, University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-110002,** within 15 days from the date of issue of the advertisement.

Persons already in employment should send their applications through their employers otherwise these will not be considered.

———Application for the post of Junior Stenographer (English)———

1. Advertisement No. :
2. Name of the Candidate :
   (in block letters)
3. Nationality :
4. Date of birth (in Christian era) :

   Date...Month...Years...
5. Father/Guardian's Name :

Affix your recent
passport size
photograph
(5cmx7cm)

6. Address for Correspondence with PIN CODE.
7. (I) Do you fall in any of the following categories
   (a) Scheduled Caste Yes/No :
   (b) Scheduled Tribe : Yes/No :
   (c) Ex-Defence Personnel : Yes/No :
   (d) Physically Handicapped : Yes/No :

If yes, please specify whether, (i) Blind or partially blind.

(ii) Deaf & Dumb (iii) Orthopaedically Handicapped :

(II) If you belong to SC, indicate your religion :

(III) Are you seeking age relaxation Yes/No (If yes indicate category under which relaxation sought) :

8. Academic Qualification : (Beginning with Matriculation)

Examination	University/ Board	Division/ Class	Marks Obtained	Remarks

9. Medium opted for Written Examination English—Hindi :
10. Sex of the applicant Male—Female :
11. Experience :

Declaration

I hereby declare that all statements made in this application are true, complete and correct to the best of my knowledge and belief. I understand that, if any time it is found that any information given in this application is false/incorrect or I do not satisfy the eligibility criteria of the University Grants Commission, my candidature/appointment is liable to be cancelled.

Place Date Signature of the Applicant

davp 823 (12)/87

CLASSIFIED ADVERTISEMENTS

INDIAN INSTITUTE OF TECHNOLOGY
BOMBAY

Advertisement No. C-138/87

Applications are invited on plain paper from the citizens of India for filling up the following temporary positions for the undermentioned projects undertaken in the Institute. All the positions are temporary initially for a period of one year and tenable only for the duration of the projects. The requisite qualifications, experience etc. are given below :

1. **Microelectronics (MHRD)**

(i) **Research Engineer** (2 posts)

Scale of Pay : Rs. 700-40-1100-50-1600. (Total emoluments on the minimum of the scale : Rs. 2123/-).

Qualifications

M. Tech. (Elect. Engg./Mat. Science) in Semiconductors/IC

OR

B. Tech. (Elect. Engg.) with 2-3 years experince in Semiconductors.

Nature of Work

Post 1 : To set up and implement various measurement systems for automated data acquisition for semiconductor devices and circuits.

Post 2 : To fabricate nMOS integrated circuits in a well-equipped microelectronics laboratory.

In case the above qualifications are not met by an otherwise promising candidate, an S.R.A. position (scale Rs. 550-900) for which the minimum qualifications are B. Tech./B.E. may be offered.

The selected candidate may have the opportunity of doing part-time Ph.D./M. Tech. in Electrical Engineering subject to satisfaction of departmental criteria.

Duration of Project : Upto 1990 (likely to continue further)

2. **Sonar Tracking System (NPOL)**

(i) **Project Engineer**

Scale of Pay : Rs. 700-40-900-EB-40-1100-50-1300. (Total emoluments on the minimum of the scale : Rs. 2123/-).

Qualification & Experience :

M.Tech. in Electrical Engineering. Experience in Fibre Optic Systems desirable.

The appointments are for time bound projects and the candidates are expected to work mainly for the successful completion of the projects.

Candidates possessing the requisite qualifications and experience may apply on plain paper stating the position applied for, title of the project, name, mailing address, date of birth, details of academic qualifications and experience with copies of certificates, testimonials to the Registrar, Indian Institute of Technology, Powai, Bombay-400 076 within 15 days. Candidates called for interview will be required to attend at their own expenses. The candidates who wish to apply for more than one post should submit a separate application for each post. Reservation of SC/ST candidates will be as per Government of India rules.

REGISTRAR

ANNAMALAI UNIVERSITY

INSTITUTE OF PHARMACEUTICAL TECHNOLOGY

ANNAMALAINAGAR

NOTIFICATION No. 5/87

Dated : 27-7-1987

Applications are invited in the prescribed form for one post of Lecturer in Pharmaceutic Pharmacognosy in the Institute of Pharmaceutical Technology of this University.

Qualifications

(a) Basic degree in Pharmacy with post-graduate qualification in Pharmaceutic Pharmacognosy, (b) Teaching experience preferable.

Scale of Pay : Rs. 700-40-1100-50-1600 with admissible allowances.

Application forms can be had from the undersigned on payment of Rs. 10/- by cash/money order/postal order/ (not refundable). Filled in applications (with 5 additional copies) should reach the undersigned on or before **20.8.1987.**

R. Rajamanickam
REGISTRAR

UNIVERSITY OF LUCKNOW

ADVERTISEMENT NO. 4/987

WANTED

Professors (Rs. 1500-60-1800-100-2000-125/2-2500)

1. Two in Education
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Lecturers (Rs. 700-40-1100-50-1600)

3. Three temporary in Zoology

Minimum Qualifications for Professors

Eminent scholarship with published work of high quality and active engagement in research and ten years' experience of teaching or research and experience of guiding research at doctorate level.

OR

Outstanding scholarship with established reputation for significant contribution to knowledge.

Minimum Qualifications for Lecturers

(a) A doctorate degree or research work of an equally high standard in a relevant subject ; and

(b) Consistently good academic record with first or high second class Master's degree or an equivalent degree of a foreign University in a relevant subject.

4. One temporary Librarian in the grade of Rs. 1540-60-1900-EB-75-2200

Minimum Qualifications

(a) First or second class M. Lib. Sc. or M.A./M.Sc./M.Com. plus a First or second class B.Lib Sc. or Diploma in Library Science.

(b) At least ten years' experience as Librarian or in a responsible professional capacity in a University Library.

(c) Ph.D. degree or equivalent research work in the field relevant to the profession ;

(d) In certain situations in academic library, training in computerization/Information Technology/ Specialized areas may also be taken into consideration.

5. One temporary Co-Ordinator, inorities Coaching Institute, in the rade of Rs. 1100-1600.

ssential Qualification

(a) First or Second Class Master's degree or an equivalent degree of a foreign University in any subject together with a doctorate degree ;

(a) Teaching experience in a University for at least five years.

referential Qualifications

Three years administrative experience in a responsible position.

GENERAL

Benefits of Provident Fund/Pension available as admissible under the rules. Period of production for permanent post is one year.

It is not necessary to fill any/all of the advertised posts. Further details about qualifications etc. are attached with application form. Canvassing will be disqualification.

Prescribed application form can be obtained free of cost, by sending a self-addressed envelope size 23x10 cm. with postage stamp worth Rs. 5.50 to cover registration charges, from the office of the Registrar. Last date for submission of applications, duly completed in all respects, with recent testimonials publication etc. and Bank Draft for Rs. 5/- (Postal Order or Money Order will no-be accepted) in the name of the Registrar, Lucknow University, payable at any Bank in Lucknow, is **August 31, 1987**.

Those who have applied for posts at Sl. 4 and 5 in response to our Advertisement No. 4/1985 dated 27.9.1985 need not apply afresh as their old application will be considered. Such candidates may, however, intimate their additional qualifications and attainments during this period for their specialisation in the respective field.

Applications without Bank Draft will not be entertained. Candidates who are in service should send their applications through proper channel. Application forms to outstation candidates will be sent upto August 24, 1987.

B.M. Singh
REGISTRAR

REGIONAL RESEARCH LABORATORY

JORHAT : ASSAM

(Council of Scientific & Industrial Research)

Advertisement No. 5/87

Applications in the prescribed forms (available free of cost from the Administrative Officer, Regional Research Laboratory, Jorhat-6 (Assam) on sending a self addressed big envelope affixing 0.45 paise stamp with a written request stating advertisement number and name of the post) are invited from candidates for the following position for RRL-Jorhat.

Scientist 'C'—1 post (Number of post may vary Rs. 3000-100-3500-125-4500.

E.Q. : A first class B.E./B. Tech. in Chemical Engineering with six years experience or M.E./M. Tech./M.S. in Chemical Engineering with four years experience or Ph. D. (Chemical Engineering) with two years experience having specialisation in any of the following fields. Chemical Reaction Engineering, modelling & Simulation of Chemical Process Systems, process control and Instrumentation, Rheology of polymeric materials.

J.R. : The candidate will work on process development and kinetics, modelling and simulation studies of gas liquid/phase transfer catalyzed/gas solid reactions with adequate knowledge of Computer programming (FORTRAN-IV) Scale-up criteria for unit operations/ processes and Applied mathematics.

GENERAL

1. Higher starting salary may be given to exceptionally qualified and experienced candidates on the recommendation of the Selection Committee.

ANNAMALAI UNIVERSITY

DIRECTORATE OF DISTANCE EDUCATION

ANNAMALAINAGAR

Dated : 27-7-1987

ADMISSION FOR THE YEAR 1987-88

Last date for issue of applications for all Courses except job oriented courses is extended upto **21-8-1987.**

Last date for receipt of filled in applications for all courses is extended upto **31-8-1987**.

Dr. M. Radhakrishnan
DIRECTOR

2. In addition to basic pay, dearness allowance is admissible as per CSIR rules in force. Total emoluments at the minimum of the scale will be Rs. 3340/- plus Rs. 150/- if no accommodation is provided. Free medical treatment, leave travel concession, pensionary benefits, etc., are also admissible as per rules.

3. Persons who are already in Govt./Semi-Govt. organisation should apply through proper channel. Candidates are required to specify and attach documentary evidence (attested copies) of E.Q. and exp. claimed.

4. The application in the prescribed form together with crossed Postal Order of Rs. 8/- payable to the Director, RRL-Jorhat-6 (Assam) should reach him by 25.8.87. S.C./S.T. candidates need not pay any fee (IPO) alohg with their applications.

Applications received after this date will not be entertained. Candidates called for interview will be paid 2nd class railway fare by the shortest route for the to & fro journey.

5. Since it is not possible to call all the eligible candidates for interview/personal discussion, the applicants to be shortlisted for the purpose and the decision of the Council/Laboratory will be final in this regard.

6. Indian candidates applying from foreign country may send their applications up to a fortnight after closing date in standard application form supplied by our missions abroad and without application fee.

7. Canvassing in any form and or bringing in any influence, political or otherwise, will be treated as disqualification for the post(s).

Interim inquires will not attended to

N.B. : Those who applied in response to our advertisement No. 3/87 need not apply.

BANARAS HINDU UNIVERSITY

CORRIGENDUM TO ADVERTISEMENT NO. 2/1987-88

The following note appeared inadvertently in this advertisement and others which stands withdrawn :

> "Panel may be drawn for temporary appointment of lecturers against future vacancies."

GURU NANAK DEV UNIVERSITY

AMRITSAR

CORRIGENDUM

The sentence "The number of post may be changed at the discretion of the University" at the end of Advt. No. 6/87 published in the University News, dated 3-8-1987 may kindly be treated as DELETED.

REGISTRAR

ROHILKHAND UNIVERSITY

BAREILLY - 243 001

CORRIGENDUM REGARDING LLM ADMISSION 1987-88

In continuation to this office circular press note dated 16th July, 1987 (already published in News Papers), it is notified that for the admission to LL.M. class session 1987-88, the admission to LL.M. Course shall be made through an **Entrance Written** test with the following details :

ELIGIBILITY : Applications can only be submitted by the applicants who are qualified for the enrolment as an Advocate.

Course of the Test :

1. Indian Constitutional Law
2. Jurisprudence
3. Substantive law (Contact, tort, partnership, and property law)
4. Procedural law (IPC, CPC & Cr. P.C.)
5. Current Legal affairs.

There will be only one question paper containing 100 objective questions of ninety minutes duration. Application form can be had from cash counter of the University or can be obtained from Dy. Registrar, Rohilkhand University, Bareilly on a payment of Rs. 10/- cash and by post with a Indian Postal Order/Bank Draft worth Rs. 16/- in favour of Finance Officer, Rohilkhand University, Bareilly payable at Bareilly. Applicacation form should be accompanied with a Bank Draft/IPO worth Rs. 50/- (Fifty rupees) as Entrance Test Fee in favour of Finance Officer, R.U. Bareilly payable at Bareilly.

Application form duly completed in all respects, must reach the Head and Dean, Faculty of Law, Rohilkhand University, Bareilly latest by **30th August, 1987**. All other details can be had from information bulletin which is supplied with application form.

B.S. Gupta
REGISTRAR

It Pays to

Advertise

in

University News

SARDAR PATEL UNIVERSITY

Vallabh Vidyanagar-388 120
(Gujarat)

Notification No. EST/3 (1987-88)

Applications are invited in the prescribed forms available from the University Office on payment of Rs. 5/- in cash or by Indian Postal Order for the following posts, so as to reach the under signed on or before **31-8-1987.**

1. Professor of Computer Science (For M.C.A. Course)

Scale of Pay

Rs. 1500-60-1800-100-2000-125/2-2500

2. **Reader each in :**

(i) Sociology

(ii) Commerce (Marketing Management)

(iii) Hindi (Two Posts)

(One post with specialization in Drama & Dramaturgy)

(iv) Library Science

Scale of Pay

Rs. 1200-50-1300-60-1600-Assessment-60-1900.

3. **Lecturer each in :**

(i) Chemistry (Theoretical Chemistry)

(ii) Economics

(iii) Education (Two Posts)

(For M.B. Patel College of Education) (1st Post with Geography and Economics Methods and Educational Technology & 2nd Post with Science & Mathematics Method and School Administration)

(iv) Computer Science (For M.C.A. Course)

(v) Library Science

Scale of Pay

Rs. 700-40-1100-50-1300-Assessment-50-1600.

4. Workshop Superintendent

Scale of Pay

Rs. 2200-75-2800-EB-100-4000.

5. Technical Assistant (Library)

Scale of Pay

Rs. 1640-60-2600-EB-75-2900

6. **For Computer Centre**

(i) Technical Assistant

Scale of Pay

Rs. 1640-60-2600-EB-75-2900.

(ii) Tape Disc Librarian

Scale of Pay

Rs. 1200-30-1560-EB-40-2040

7. Technician 'D'.........(Diploma in Mechanical Engineering)

Scale of Pay

Rs. 1400-40-1600-50-2300-EB-60-2600

8. Technician (Electronics/Electrical) (For M.C.A. Course) (Temporary)

Scale of Pay

Rs. 1200-30-1560-EB-40-2040

9. Mason

Scale of Pay

Rs. 1200-30-1560-EB-40-2040.

Details of the prescribed qualifications will be supplied alongwith the application forms. All the posts except at Sr. No. 8 carries the benefits of Dearness Allowance, Provident Fund, Gratuity and Pension Scheme as per University Rules. Post at Sr. No. 8 carries the benefit of Dearness Allowance only.

Preference will be given to the qualified candidates belonging to Scheduled castes, Scheduled Tribes, Socially and Educationally and/or Economically backward class. Candidates belonging to these castes must attach a certificate from appropriate authority.

R.C. Thakkar
REGISTRAR

INDIAN INSTITUTE OF TROPICAL METEOROLOGY

PUNE-411 005

Advertisement No. 4/87

Applications are invited for the following posts reserved for the Scheduled Tribe candidates only.

1. **Senior Scientific Officer Grade II**

No. of Posts : Four posts.

(Two posts reserved for Scheduled Caste and two posts for Scheduled Tribe candidates)

Scale of Pay : Rs. 2200-75-2800-EB-100-4000 (Revised)

Age limit : 40 years or below as on 1.1.1987.

Qualifications :

Essential : (i) A good Master's degree or equivalent in Meteorology, Physics, Mathematics, Applied Mathematics, Statistics, Applied Physics or Geophysics.

(ii) About three years research experience (as evidenced by published papers).

Desirable : Good background in Mathematics/Statistics.

2. **Junior Scientific Officer**

No. of posts : Three posts.

(Two posts reserved for Scheduled Caste and one post for Scheduled Tribe candidates)

Scale of Pay : Rs. 2000-60-2300-EB-75-3200-100-3500 (Revised)

Age limit : 35 years or below as on 1.1.1987.

Qualifications

Essential : A good Master's degree or equivalent in Meteorology, Physics, Mathematics, Applied Physics or Geophysics.

Desirable : Good background in Electronics.

3. **Senior Scientific Assistant**

No. of Posts : Five posts.

(Three posts reserved for Scheduled Caste and two posts for Scheduled Tribe candidates).

Scale of Pay : Rs. 1640-60-2600-EB-75-2900 (Revised).

Age limit : 35 years or below as on 1.1.1987.

Qualifications : A Master's degree or equivalent in Meteorology, Physics, Mathematics, Applied Mathematics, Statistics, Applied Physics or Geophysics.

4. **Scientific Assistant**

No. of Posts : Three posts

(Two posts reserved for Scheduled Caste and one post for Scheduled Tribe candidates).

Scale of Pay : Rs. 1400-40-1800-EB-50-2300 (Revised)

Age limit : Mimimum 20 years & Maximum 33 years as on 1.1.1987.

Qualifications : (i) Bachelor's degree in Science with Physics as one of the subjects.

(ii) Must have secured 50% marks in optional subjects taken together (Not applicable to candidates possessing Master's degree in Science).

(i) All posts carry allowances as admissible to Central Government employees stationed at Pune.

(ii) Upper age limit is relaxable for ex-servicemen and Physically handicapped persons as per rules. No age limit for the IITM Government employees.

UNIVERSITY NEWS, MONDAY, AUGUST 10, 1987 Regd. No. R.N. 7180/63 Post Regd. D(C) 1086

(iii) Detailed information and application form can be obtained from the Director, Indian Institute of Tropical Meteorology, Post Box No. 913, Pune-411 005, by specifying the name of the post and sending a self-addressed envelope (23 cm x 12 cm) with Re. 1.80 ps. postal stamps affixed.

(iv) Candidates already employed in Government/Semi-Government Organisation/Public Sector Undertaking should apply through proper channel.

(v) Candidates called for interview will be paid IInd Class railway fare both ways.

(vi) The last date of receipt of application is **30th September, 1987**.

INDIAN INSTITUTE OF TECHNOLOGY

MADRAS

Advertisement No. IITM/R/4/87

IIT MADRAS, a higher technological Institute invites applications for the following positions in Central Administration. The pay scales (Pre IV Pay Commission) are noted against each post. The approximate gross emoluments given in brackets include HRA at the minimum of pay scale.

1. **Assistant Registrar** (4 Posts)

Rs. 700-40-1100-50-1600
(Total Rs. 2124/-)

(i) **Qualification**

(a) A good Bechelor's Degree in Arts, Science, Commerce, Engineering or Technology of a recognised University.

(b) A Post-graduate degree or Diploma in any ,of the above fields or in Public Administration/Management of a recognised Institute/University or its equivalent; or recognised qualifications as Chartered/Cost/SAS Accountant.

(ii) **Experience**

A minimum of 8 years of relevant administrative experience preferably in a Government, Educational or Research Institute or in a commercial organisation of national standing. The candidates would be expected to have some familiarity with academic activities and working procedures in higher educational institutions.

(iii) **Desirable**

(a) Teaching and Research Experience or experience of life on a residential educational campus.

(b) Experience of computer systems for information processing and retrieval.

In the case of candidates with exceptional qualification, the duration of experience may be relexed suitably at the discretion of the Institute.

(iv) **Reservations**

One Post for Scheduled Caste and one post for Scheduled Tribe is reserved.

2. **Assistant Finance & Accounts Officer** (2 Posts) :

Rs. 700-40-1100-50-1600 (Total Rs. 2124/-)

(i) **Qualification**

A good Bachelor's Degree in Arts, Science or Commerce of a recognised University.

A Post-graduate Degree or Diploma in Commerce or Management of a recognised Institute/University; or recognised qualifications as Chartered/Cost/SAS Accountant.

(ii) **Experience**

A minimum of 8 years of relevant accounts experience in a Government, Educational or Research Institute or in a commercial organisation of national standing. The candidates would be expected to have some familiarity in accounts and financial management and working procedures in higher educational Institutions.

(iii) **Desirable**

Experience of computer systems for information/data processing and retrieval.

In the case of candidates with exceptional qualification the duration of experience may be relaxed suitably at the discretion of the Institute.

(iv) **Reservation**

One post is reserved for Scheduled Caste Candidates.

3. **Secretary (Public Relations)** (One Post)

Rs. 650-30-740-35-880--EB40-960.
(Total Rs. 1967/-)

(i) **Qualification**

A good Bachelor's Degree of a recognised University. A Post-graduate diploma in Journalism and Public Relations of a recognised Institute/University.

(ii) **Experience**

A minimum of 7 years relevant experience in an academic Institution/Business organisation/Government Departments in matters relating to training and Placement/Good Public relations/Interaction with outside agencies.

Knowledge of accounts, good command of English and supervisory experience in a reputed office are essential.

General Information/Conditions/Instructions

(i) For all posts experience means experience gained after the qualifying degree.

(ii) The prescribed qualifications are minimum and the mere fact that a candidate possesses the same will not entitle him/her for being called for interview.

(iii) The Institute reserves the right to restrict the number of candidates for interview to a reasonable limit, on the basis of qualifications and experience higher than the minimum prescribed in the advertisement.

(iv) The Institute also reserves the right of rejecting any or all the applications without assigning any reasons therefor.

(v) The qualification regarding experience is relaxable at the discretion of the Institute in the case of candidates belonging to the Scheduled Castes/Scheduled Tribes if at any stage of selection the competent authority is of the opinion that sufficient number of candidates from these communities possessing the requisite experience are not likely to be available to fill up the vacancy reserved for them.

For application forms, please address the Registrar Indian Institute of Technology, Madras 600 036 with a self-addressed stamped (1.00 Re.) envelope (22 cm x 17 cm). Applicants are requested to indicate clearly the post for which they wish to be considered. Persons in the service of Government establishment and Public Sector undertakings should apply through proper channel.

Completed applications with a crossed non-refundable current Indian Postal Order of the value of Rs. 7.50 (Rs. 1.90 for SC/ST candidates) drawn in favour of the Institute, payable at IIT Madras P.O. should be sent to the Registrar of the Institute.

The last date for the receipt of completed applications is **31st August, 1987**.

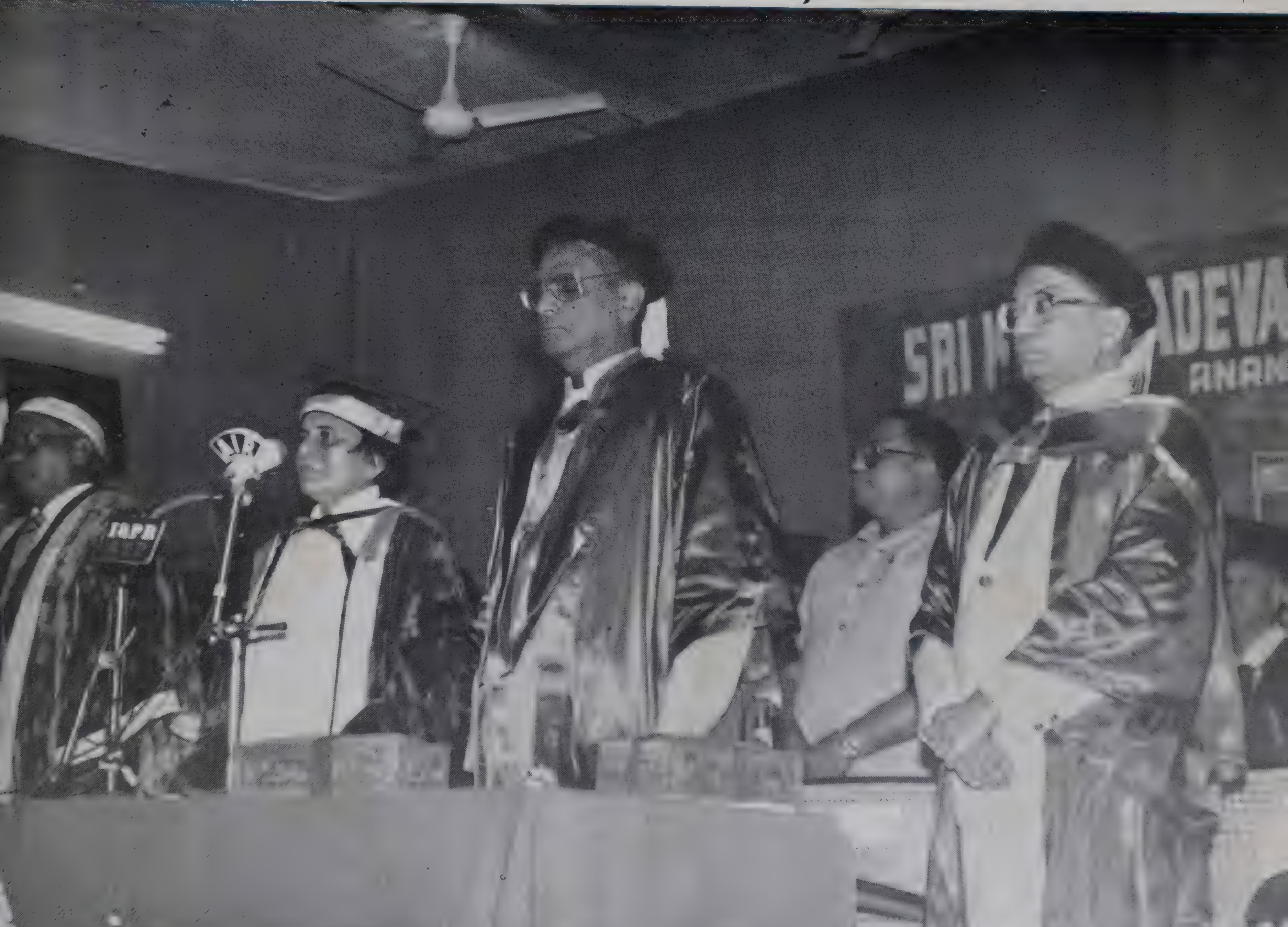
DEAN OF ADMINISTRATION

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navjeevan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension. New Delhi-110055, Tel. 529157

University News

MONDAY, AUGUST 17, 1987

Rs. 1.50



Prof. K. Satchidananda Murty (third from left), Vice-Chairman, UGC, delivered the Convocation Address at the Sri Krishnadevaraya University. Seen on his right are Smt. Kumudben Joshi, Governor, Andhra Pradesh and Prof. M. Abel, Vice-Chancellor of the University

CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF KERALA

University Buildings, Trivandrum.

Dated : 31-7-1987

NOTIFICATION

Applications are invited from qualified candidates for appointment to the following posts in the University :—

Serial Number	Name of Post	Department	Number of Posts	Remarks
1	Professor	Statistics	1	Reserved for Ezhava Community
2	Lecturer	Russian	1	

Application forms and details regarding qualifications, age, scales of pay, etc. can be had on request from the Deputy Registrar (Administration), University of Kerala, Trivandrum-695 034 on production of a challan receipt for Rs. 2/- (Rupees Two only) remitted under Kerala University Fund Head of Account in any branch of the State Bank of Travancore or crossed Indian Postal Order for Rs. 2/- (in the case of persons outside the State) drawn in favour of the Finance Officer, University of Kerala, Trivandrum-695 034.

Last date for receipt of applications is **31-8-1987.**

S. K. Rajagopal
REGISTRAR

UNIVERSITY OF ALLAHABAD

Advertisement No. 4/87

Applications for the following posts are invited upto **28.8.1987** on the prescribed form obtainable on payment of Rs. 5/- in cash or by crossed postal order for Rs. 8/- in case the form is desired by Registered post, payable to the Registrar, University of Allahabad, Allahabad. Envelopes containing applications forms should be superscribed with the name of the post.

Applications should be accompanied with copies of books and reprints of research papers published and attested copies of testimonials. Application form to out-station candidates will be sent by post upto **14.8.1987**.

Those who have already applied for these posts in response to earlier Advertisements are also required to apply afresh on the prescribed form :

I—Permanent Professor in :

(a) Hindi—2, (one in Jaisee Peeth), (b) Arabic & Persian—1, (c) Ancient History—2, (one in Socio-Economic History), (d) Medieval & Modern History—2, (e) Chemistry—3, (f) Physics—1, (g) Botany—1, (h) Zoology—1, (i) Law (Jurisprudence)—1, (j) Computer Science—1 (Electronics & Communication Department), (k) Head, Computer Centre—1.

II—Temporary Professor in :

(a) Computer Science—4 (under DRDO Project for a period of five years in first instance for Electronics & Communication Department).

III—Permanent Reader in :

(a) Psychology—2, (b) Medieval & Modern History—2, (c) Geography—1, (d) Politics—2, (e) Education—1, (f) Physics—1, (g) Chemistry—4, (h) Mathematics—3, (i) Statistics—1, (j) Botany—2, (k) Home Science—1, (l) Economics—2, (m) Law—1, (n) Electronic & Communication—1, (o) Computer Science—2, (p) Commerce—1, (q) Philosophy—1.

IV—Temporary Reader in :

(a) Physics—3, (b) Sanskrit—1, (c) English—3, (d) Computer Science—8 (under the DRDO Project for a period of five years in the first instance), (e) Electronics & Communication—1.

V—Permanent Lecturer in :

(a) Bengali—1, (b) Telugu—1, (c) Hindi—1, (d) Arabic & Persian—2,
Philosophy—2, (f) Geography—1,
Education—1, (h) Physics—1, (j) Defe
Studies—2, (k) Commerce—1, (l) Tam
1, (m) Ancient History (Archaeolog
Chemistry)—1, (n) Law—1, (o) Cher
try—2, (p) Electronics & Commun
tion—3, (q) Computer Science—3,
Physical Education—2, (s) Fine
(Music)—1, (t) Chinese—1.

VI—Temporary Lecturer in :

(a) Hindi—1, (b) Ancient History
(c) Geography—1, (d) Politics—3,
Chemistry—1, (f) Mathematics—1,
Botany—1, (h) Bio-chemistry—1,
Commerce—1, (j) English—3,
Physics—1, (l) Geology—1, (m) So
logy—1, (n) Electronics & Commun
tion—2, (o) Computer Science—3 (
in Elect. & Comm. Deptt.,) & two u
the DRDO Project for a period of
years in the first instance).

Salary Scale

For Professors ... Rs. 1500-60-18
100-2000-125/2-2500.

For Readers ... Rs. 1200-50-13
60-1900.

For Lecturers ... Rs, 700-40-11
50-1600 plus D.A. etc. according to ru

Note : (1) Qualifications and requ
ments for the posts will be the sam
laid down in the Statutes of Allaha
University amended upto date which
be supplied alongwith the applicat
form.

(2) For Head Computer Centre :

As prescribed for the Professors in
Faculty of Science with additio
requirement of having experience of
years in managing a mainframe Co
puter Centre.

Preferential Qualifications

For the posts of Reader/Lecture
Computer Science, preference will
given to one who has specialized Tra
ing/experience in Computer Technolo

**Other Condition for the Temporary Po
Under the DRDO Project**

Although the project of the Defe
Research & Development Organizati
Ministry of Defence is for five years,
the appointment under this project
be made for a period of less than
years if the University or the candid
so desire.

Provident Fund/Pension benefits
DRDO appointees will also be given
they are maintaining lien in their ear
positions.

Other Conditions for Permanent Post

(a) The period of probation shall
one year.

(b) The incumbent will get
benefit of provident fund as per rules.

(c) The age of superannuation sh
be sixty years.

B. N. Singh
REGISTRAR

UNIVERSITY
NEWS

OL. XXV	AUGUST 17
o. 33	1987
rice	Rs. 1.50

Weekly Chronicle of Higher ducation published by the ssociation of Indian Universities

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

ditor:
UTINDER SINGH

Computers in Distance Education

K. Gunasekaran*

Today there are 29 Universities in India which impart education through Distance Education, commonly known as correspondence courses, (AIU, 1984). Of these, some have traditional approach and few others open approach. In the traditional approach, only those students who fulfil the academic requirements are admitted whereas in in the open approach there are no such academic restrictions. For instance, in the former approach only a student who has qualified in, say, B.A. History is admitted into M.A. History course. In the latter approach, no such restrictions are made. The only condition is that he should have completed 21 or 25 years. Depending on the academic background of the students admitted, appropriate bridge courses are given to them. The Andhra Pradesh Open University and the recently created Indira Gandhi National Open University are meant exclusively for the students under the latter category. The universities which are offering correspondence courses have established what are called Institutes of Correspondence Education (ICE) to manage the programmes. Recently many universities have established 'Open University' system within the ICE to manage the programmes relating to latter approach.

As per the study done by Ruddur Datt (1984), "the total number of students enrolled in Correspondence Courses in India is 1.59 lakhs as against 29.52 lakhs (excluding PUC courses) in regular colleges and University Departments". It is interesting to note the distribution of students under ICE. Of the "total enrolment of 1,59,712 students, Southern Region accounts for 63 per cent of total enrolment, Northern Region 26.2 per cent, Western Region 9.1 per cent and the Eastern Region 1.5 percent" (ibid).

Unlike their counterparts in various colleges who have regular opportunity to get into contact with the faculty members to clear the doubts that may arise, the students of ICE are at a disadvantageous position. Therefore, some innovative methods have to be employed by ICEs to make its students learn effectively and efficiently. But a study of the methods adopted by the 29 universities which are having ICEs shows that almost all the universities depend on the print medium, i.e. sending lessons to the students, and the contact seminars organised once/twice in a year (AIU, 1984). Except in the Professional Courses, the attendance in the Contact Seminar is not compulsory. As large number of students attend the contact Seminar and many papers are being covered within a span of 3 to 4 days, no worthwhile discussion can take place. Maybe due to this reason, many students do not attend the Contact Seminar. According to Gupta (1983) only 20%-60% of the students attend the Contact Seminar. A few universities use Radio and some have established study centres with library facilities where students can come and learn by consulting books. Many non-conventional approaches (to be adopted), to teach the students totally are lacking. This will result in students losing interest in the studies and leave the courses in between. Or, the students who are not motivated enough may fail in large numbers in the examination. The study done by Gupta (1983) support these hypothesis. In this situation, the best thing is to give individual attention to the students

(Continued on page 6)

**Education Officer, University Grants Commission, New Delhi-110002.*

Project Method in Language Education

Anil Pathak*

For a long time the field of education suffered because of inadequate knowledge of the correlation between teaching and learning. Attention was focussed entirely on the content of the curriculum and the process of learning was neglected to a large extent. All innovations were directed, and to some extent are still being directed, on the content of curriculum and a large body of learners hardly gained anything from these innovations. Fortunately, the simplistic notion at the basis of such innovations—whatever is taught, is learnt—is not held widely now-a-days, and there has been a shift from the 'Content of teaching' to the 'process of learning'. If we look at the role of educator as someone who initiates the process of learning, the 'project method' becomes an integral part of education. The Method develops self-reliance among the learners and should be looked at as a natural process of learning where lesser the interference from the teacher, the better it is.

Aims of Language Education

Language education is primarily necessary since learning a language usually opens a whole new vista for the human beings. Being a bilingual is necessary not only for the communicative needs of the changing times but also for personality development leading to a richer and healthier life. Under this common framework, the purpose of learning a language may be different from one individual to another. Hence it should be considered inappropriate to force any of the aims of learning a language on the learner. Unfortunately, conventional Indian Syllabi put a lot of emphasis on learning language for literature, and virtually ignore its other uses. This emphasis results into frustrated, unsuccessful learners who cannot use a language for communication, even after 'learning' it for 8 to 11 years. A language is a tool which can be used for many purposes, one of which is reading the literature in that language. This in no way implies overburdening of the syllabi with imaginative literature.

Unless the objective of language education is clear, the 'project method' (or any other method) cannot be successfully applied. A few Indian universities have accepted the project method common lacunae is the lack of specifications f project work. Teachers usually consider 'deve research aptitude' as the aim of the project wo apply their ideas of research to it. If one is minded, one can clearly see the disastrous quences of considering the project work in mas cation as 'research' in the usual sense of the If the learner is not compelled to do 'resear some sort or the other and is left free to put fo his perceptions in his project, the process of lea will not be hampered. 'Research ability' cannc should not form an integral component of mas cation, since in their future very few studen involved in research of any kind. Another that needs to be pointed out is applying the p method to language education and to socia natural sciences without any discrimination. dering the goals of language education, it be absolutely necessary to apply the Method ind dent of any other norms.

'Process' and 'Product' in Language Education

To develop such independent norms, it be necessary in the first instance to consider the p of project work much more important than th duct. The project work in language education s not be considered merely a thirty or forty page volume. What is of significance is the whole p of language learning which underlies that vo To use an analogy, the product is only the tip iceberg which should help us predict the size whole iceberg. A learner who submits a forty length finished product must have gone thro long process of language learning and our obviously that process and not the product. It course, possible that a learner, for some reason other, does not reach the stage of a finished pr Even in such cases it would be wrong to say th has not picked up any language in that process. the job of the teacher who guides a project w language is not just to help the learner pres finished product, but the teacher should a making the whole process significant from point of view.

To make the process significant, the teacher s understand that the project method, if properly

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*Department of English, Sangamner College, Sangamner-422605.

24 AUG 1987
F T. R. I., MYSOF

can develop all the four skills in language, namely, listening, speaking, reading and writing. Though it is common to believe that project work is mainly concerned with the writing skill; discussions related to the project-topic involve a great deal of oral-communication; and research has shown that good readers can more easily become good writers. Thus the process of project work can be a multitudinal network involving the reading related to the project, discussions with the teachers and other learners and sometimes even acquiring language input through the mass media. Such a network provides the learner with a variety of language input (though only related to one field or subject) and helps him acquire the language without his being conscious of the process. Thus it is desirable for the learner to think that he is learning about the subject of his project (which may be from geography or politics) and through oral-written interactions pick up some language in the process. Once this principle is accepted, our choices regarding the topics for the project work can be automatically decided. Since our concern is not with the 'subject' and since we are using the topics only as vehicles to carry the language, we should leave the choice of topics entirely, upto the learner. The learner will be involved in the interactions if and only if the topic interests and motivates him. There is a tendency on the part of the educators to assign either vague or ambitious topics to the students. Such topics are cognitively too demanding and the learners fail to understand what is expected of them. For successful language acquisition, any topic that is interesting would do and it is absurd to suggest that good language goes only with conceptually difficult topics. It is possible to use mediocre language while writing on 'Is Democracy a Curse ?' just as it is possible to find an excellent piece of writing on 'Cow' or 'My Home'. Undue stress on the cognitive abilities is unnecessary in language education and can seriously interfere with he process of language learning.

To avoid an undue stress on the cognitive abiliies of the learner and to make the process of learning 'exciting' it seems to be desirable to let the learners elect an topic of their choice. They may be advised o ask the following three questions to themselves.

(1) Does the topic really interest you ?
(2) Can you write 30-40 pages on this topic ?
(3) Is your guide teacher or any friend you can interest with interested in this topic ?

If all these three questions receive a positive nswer, the topic may be finalised. Such a topic can run the process of gaining the input very smoothly and thus help langauge acquisition.

A Word on Evaluation

Finally, it would be quite undesirable to evaluate only the finished product when the Method demands more emphasis on the process. For obvious administrative reasons, due weightage need be given to the final product. However the guide-teacher's observations on the process would be the most proper criterion for a project work in language education. Thus a worthwhile percentage of marks must be reserved for the observations of the guide-teacher. The model of continuous internal assessment is quite in consonance with the Project Method. Perhaps, what needs to be repeated is the principle that whatever the mode of evaluation, the student must be evaluated for his language performance alone and applying any other criterion (like 'his knowledge of research methodology') would be irrational and undesirable. ☐

UNIVERSITY NEWS
A Weekly Chronicle of Higher Education

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Association of Indian Universities
AIU House, 16 Kotla Marg
New Delhi 110002

An Intellectual Community

In a very thought provoking Address delivered at the Second Convocation of Sri Krishnadevaraya University, Prof. K. Satchidananda Murty, Vice-Chairman, University Grants Commission lamented the absence of an intellectual community in centres of higher learning. "Colleges and universities", he said "are set up and given external accompaniments, but they remain shallow within, without the warmth and fellowship of an intellectual community". This has resulted in non-acquisition of values and standards, the spirit of enquiry and criticism which are the basis of all scientific progress. Excerpts :

In a recent news report I read that there is a 'crisis' in higher education, due to its 'massification', partly caused by political pressure, which led to greater political interference in the daily functioning of universities. This, the report stated, was the unanimous view of the Vice Chancellors of three universities in our principal metropolis. It is also reported that they did not appear to be enthusiastic about the New Education Policy, as "much will depend on how it is implemented". (*The Hindu*, Delhi Edition, May 9, 1987).

Convocation

In 1941 Rabindranath Tagore gave an address on the "Crisis in Civilisation". In 1953 appeared A.J. Toynbee's *Civilisation on Trial.* If one reads the reports of various commissions on higher education in India, one finds that every one of them talks about a crisis in higher education. It may be remembered that crisis is nothing but a turning-point when a momentous decision has to be taken. Crisis in civilisation or education are nothing new; they recur.

What is the nature of the crisis in our higher education? During 1917-19 the then Principal of Ripon College, Calcutta, R.S. Trivedi presented a memorandum to the Saddler Commission. In it he stated that the University of Calcutta was "altogether a foreign plant imported into this country", and that the new education system was introduced in entire ignorance and complete defiance of the existing social order. In a speech at Madras in March 1925 Mahatma Gandhi remarked that education received in the colleges in India did not correspond to the life around in the villages in which alone real India was to be found.

According to thinking of the above sort higher education in India has become an alien system because it is not in tune with traditional Indian society and rural life. If traditional Indian society is hierarchical and unjust and if rural life is based upon unremitting toil, poverty, illiteracy and ignorance, educational institutions which defy such a social order and do not correspond to such a life have to be commended. But are our educational institutions really so? Does teaching and research in them inspire one to strive for an egalitarian society, to eradicate poverty, and to live wisely and rationally? I think the great problem with our colleges and universities is that they do not motivate their products to replace the existing social order with a rational, just and humane social order.

Some people point out that as our higher education does not enable one to become self-employed and leads to educated unemployment on a large scale, it is to be condemned. It is good to be educated and employed; but there seems to be no greater virtue in uneducated unemployment than in educated unemployment. Higher education of whatever type cannot by itself provide employment to all who receive it. In 1986 in the European Community there were 23 million unemployed workers, and today in Britain 3 million are unemoloyed. In whatever way school education and higher education may be improved, they cannot by themselves lead to full employment of all those who receive them. By just not receiving them also one cannot get employed. For creation of adequate employment opportunities, for training individuals for jobs which are available and skills which are needed, social transformation of a radical type is necessary. Unless the developmental possibilities and the manpower needs for the next 20 years or so are determined and longterm planning of education undertaken, educated unemployment is bound to persist in spite of qualitative improvement of education.

Our science teaching and research are criticised because they are not leading to any significant social and economic development. Acceleration of scientific progress does not directly result in acceleration of social progress. While technological progress depends on the rate of utilisation of scientific knowledge, it is adoption of the best available form of technology in agricultural and industrial production that leads to prosperity.

It is charged that our higher education is irrelevant. By this it is probably meant that it imparts abstract inert knowledge which cannot be at once utilised in action. Much student unrest arises out of students being restricted to a marginal role at a time when youthful energies are at their peak. To be in a college and university for years without a responsible social role and uncommitted to adult institutions leads to tension and frustration. This is a cause of student unrest. By ensuring that only those who are fit and motivated join colleges and universities unrest can be minimised.

It is important to understand the nature of relevance. The relevant is not always to what exists only; it could be also to what is going to be. Much that is learnt in an agricultural college may not be relevant to the type of agriculture with its low productivity carried on in the villages today. But once ways of having another type of agriculture are found, what is learnt in a college could be highly relevant. To say pure Mathematics, Metaphysics or Painting are irrelevant to village life, and only village life is real life, is philistinism. To say that Kalidasa's *Shakuntala* or the paintings at Lepakshi are irrelevant because they could not in the slightest degree alleviate the miseries of the starving, is to condemn civilisation. We need pure science, poetry and philosophy as much as we need technology. Only all these should not be accessible to a select few only. This means the goal must be every adult should have the opportunity to acquire a capacity to enjoy *Shakuntala* and the paintings at Lepakshi.

The relevant is that which gives insight into reality, social and physical, providing an understanding of the past from which we have inherited and the future into which we believe we are moving.

The greatest defect of our higher education system seems to be the lack of an intellectual community. Colleges and universities are set up and given external accompaniments, but they remain shallow within, without the warmth and fellowship of an intellectual community. The values and standards which are the essence of western civilisation, the spirit of inquiry and criticism which is the basis of all scientific progress — these are not acquired by most in our higher education institutions, nor are the values and standards which sustained Indian culture for centuries.

The educated man must be a man responsible for civilisation. Education should supply an adequate number of common ideas which can give an effective unity and consequently an effective influence on contemporary problems. We need an education which gives coherence and unity to our interests and intentions. Colleges and universities should impart to their products the power of understanding and judgement. Then only one can understand the interplay of ideas, forces and events, chart in some fashion their direction and obtain a glimmer of their meaning.

All that is said above can be done only by a college or a uni-

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versity. But today in India there is no real college or university. A college should have consensual democracy, and a structure in which its members can equally participate in decision-making and do what they ought to do with minimal controls. A university is that which has a unified vision of the end, and is governed by consent and after consultation. Our National Policy on Education, 1986, says "higher education is what provides people with an opportunity to reflect on the critical social, economic, cultural, moral and spiritual issues facing humanity". Of course, it should also contribute to national development. This is an excellent definition of the end of higher education. What are the ways for inculcating the ability to critically reflect and are they being taught in our universities? If they are not, they do not deserve to be called universities.

Universities in India are sometimes branded as alien implantations. India has had always a tradition of higher education. In different forms we did have universities long before they came to exist in Europe. In modern times when universities came to be established, the model adopted was that of London with some changes that were necessary. In more recent times the model has been that of Sussex and Essex. If parliamentary democracy, the legal system and technology can be borrowed and blended harmoniously with our culture, why cannot a system of education be also adapted and integrated with our culture? It may be remembered that the Paris and Bologna models were adopted by Germany, England, Spain and other countries. New models evolved in Goettingen and Halle later. Since then many other types of universities have come into being. Even in 1964 it was lamented that American universities "had not yet developed their full identity". One wonders whether even today there is a unique American model completely different from all foreign models. Maybe in the fullness of time each nation would evolve its own model or models.

More important than building, equipment etc. are the socio-economic factors outside the education system. Difference in the quality of education between nations is not so much due to the inputs into the system but the milieu within which it functions. □

Computers in Distance Education

(*Continued from page* 1)

while they learn. Of course, it will not be possible to recruit many teachers to do this job. The problem can be tackled in many ways. One such method is to use a computer to teach the students. Can a computer teach ? Yes, it can. What is needed is software package developed for a course. Once the package has been developed, the students can effectively learn through a Computer. It is done as explained below.

Once the package is fed into a Computer, the Computer will display a concept on its monitor. After reading it, the student will move to the next frame in which a series of questions based on the concept just learnt will be displayed and he will have to answer them. If he chooses correct answers for all the questions, then the next concept is shown on the monitor and the process continues till he finishes the last concept in the subject concerned. Whenever he commits a mistake in answering the questions, necessary tutorial work is given to him. This method is known as Computer Aided Instruction (CAI). It in necessary that the concepts are built logically. Therefore after finishing the exercise successfully, a student would have mastered the subject concerned. At present, some banks are using the system to train their staff members on various aspects of banking. Many imported software packages are available in India to teach the students in various subjects relating to secondary level. But; excepting in a few cases, no serious attempt has been made in the Higher Education level. The recently started Indira Gandhi National Open University may use this system extensively for various courses. For this, the syllabi have to be standardised based on which a CAI system can be developed. After necessary testing of the package is over, it can be duplicated and sent to the Study Centres which are supposed to have a Computer. As Institutes of Correspondence Education are financially sound in most of the cases, the finance will not be a limitation in opening many study centres with computer facility. Alternatively, the universities in the Southern Region, can come together (as large number of students are concentrated in this region) and develop a CAI system for a core curriculum which is developed by finding out the common topics in the syllabi of different Universities. Based on the feedback received from the students, the programmes may be revised. As pointed out earlier, the CAI will make learning an interesting affair and at the same time ensure at the end that every student who had undergone the process have mastery over the subject. It is hoped the National Open University will initiate action in this direction and set the pace for other universities. □

University Youth and the Festival of India in USSR

A delegation of 340 youth, including 66 University Youth, returned to Delhi recently after participation in the Festival of India in USSR. The Festival commemorates the 40th anniversary of Indian Independence and the 70th anniversary of the Great October—Socialist Revolution.

The first group comprising 49 students from the Universities of Rajasthan, Gauhati, Bangalore, Jadavpur and the Bharathidasan University arrived in Moscow on July 1, 1987. The Festival was inaugurated on 3rd July at the Cathedral Square and Lenin Stadium. The function at the Cathedral Square was organised for the special guests while at Lenin Stadium it was for the common public. Prime Minister Rajiv Gandhi inaugurated the festival. A gala performance of Indian Folk Dances was put up by the Indian artists followed by a film show projecting diverse culture of different parts of India. The ceremony ended with bewitching fireworks.

The Youth Programmes commenced on July 4, 1987 with a Seminar, an Exhibition and Cultural items. In the Seminar, held at Hotel Orleonok, 10 youth, 5 each from India and USSR spoke on "the Development of Soviet-Indian Friendship". Out of 5 Indian youth participants, two were from the universities, namely, Anirban Ghosh (Jadavpur) and Gayatri Vedantam (Bangalore).

The same evening the youth cultural contingents dispersed into 5 sub-groups for five different regions of USSR. They were received with great love and warmth by the Soviet Youth at each place with the traditional Bread and Salt ceremony. The participants from Gauhati University accompanied the first of the five sub-groups and attracted big crowds wherever they performed the Bihu. The Bihu folk dance was accompanied by appropriate songs and playing of instruments. The songs have a wide range of folk tunes to which dancers make their body movements at the same time keeping time with the **dhola** (drum), **Pepa** (horn pipe), **taka** (a partly split bamboo instrument), **gagana** (jep horn) and the like. The dance is an expression of the exuberant spirit of spring and erotic sentiment. The participants from Bharathidasan University presented Group Songs and Folk dance. The participants in Group Song travelled to several places with the second sub-group. The youth sang two group songs, viz. **'Oli Padaitha Kanninai Va Vava'** and **'Gayeja'**, calling youth to dedicate themselves to unity, prosperity and universal peace.

The Karagam Folk Dance also proved a big hit. The participants danced with a brass pot decked on their heads with flowers in a conical shape. To the accompaniment of Thavil and Natha Swaram the Karaga dancers carefully balanced the pots on their heads, executing movements without upsetting the Karagam on the head.

Ghoomar dancers of Rajasthan University accompanied the third sub-group. The participants with their colourful costumes and smiling faces behind veils danced with soft body movements. The song for the dance was sung on **Shehnai** and **Nagda** the two traditional Folk Instruments of Rajasthan.

As the First Youth Group returned to Delhi from Moscow, the Secod group of 160 youth, including 17 University Youth reached Moscow on July 15, 1987 to participate in the second main inaugural of the Festival of India held at Leningrad on July 17, 1987. The main event was inaugurated by Mr. P. Shiv Shankar, Union Minister for Commerce, while the Youth Programme was inaugurated by Shri Rajesh Pilot, Union Minister of State for Surface and Transport. The youth remained in Leningrand till July 18 and put up several informal cultural Shows which were highly eulogised by the Russians.

On July 19, the Youth moved in four directions to cover various places. The Holi Folk Dance of Haryana Agricultural University, Hisar was a big hit as the young artists expressed their feelings and emotions through vibrant actions reflecting their culture.

The Youth from Patna and Annamalai Universities presented a superb performance through violin jugalbandi. They were trained during Inter-University National Youth Festival held at Annamalai University from December 1 to 5, 1986 ; and were recommended for the Festival of India Programme. In Carnatic and Hindustani music there are some common ragas in both styles which were played by the young artists, ably assisted on tabla and mridangam.

The third Youth group of 160 is scheduled to leave for Tashkent on September 2, 1987. The group includes 45 youth from following Universities of Bombay (Chowlia Folk Dance), H.S. Gour Vishwavidyalaya (Badhai Folk Dance) Jodhpur (Santoor Recital), Agra (Seminar), Andhra (Seminar), Dayalbagh Educatonal Institute, Agra (Gorup Song) and the Tata Institute of Social Sciences (Seminar). □

Undergraduate Curriculum and Social Relevance

A four-day national seminar on 'Undergraduate Curriculum and Social Relevance—Need for Community Colleges' was held under joint auspices of the Association of Indian Universities and the Gujarat Vidyapith at the Gram Seva Mahavidyalaya, Randheja recently. The Governor of Gujarat and the Chancellor of the Gujarat Vidyapith, Mr. R.K. Trivedi inaugurated the Seminar. In his address, Shri Trivedi called for restricting higher education to only meritorious students while the career conscious could go in for open university courses. He felt that the syllabi should be reoriented to meet the social needs. Subjects like population control, fast-depleting natural resources, pollution should be taken up at the college level. He cautioned against placing too much emphasis in the curricula on science and technology at the cost of social sciences and observed that uncontrolled science was more harmful than no science at all.

Prof. Ramlal Parikh, Vice-Chancellor, Gujarat Vidyapith in his keynote address said that it was an irony that all the rush in the country was for about 3200 colleges in the urban areas while the colleges in the rural areas attracted only 100 students. It was unfortunate, he observed, that the villagers trained in the colleges had to ultimately work for the development of urban areas. He said that stress should be laid on development of rural areas where three-fourths of the population lived. To him the answer lay in the development of community colleges. He urged the participants to draw up the blueprint of a strategy for the conversion of non-viable colleges in the country into community colleges. He suggested that these colleges should teach only such subjects as will lead to self-reliance and sef-employment with excellence.

A field trip was organised to a village, Safai Vidyalaya and Sabarmati Ashram. Participants had the opportunity to have a face to face discussion with the President of a Zila Parishad, Sarpanch of a village, village women and local artisans. This helped the participants in indentifying the thrust areas for the community colleges. During the seminar the participants prepared a Blueprint, "Community College—An Institution for Excellence with Education for Self-Employment". It emphasised the need to make education relevant to the needs of the people by integrating formal and non-formal education. It was noted that the thrust on adult education and the introduction of vocational courses in the formal stream was a step in the right direction. The non-formal stream offers education upto the primary level through the Jan Shikshan Nilayams which enable adults, school dropouts and women to receive education as and when convenient. To achieve the twin aims of curbing migration of the rural people to the urban areas and fulfilling the aspirations of upward mobility by providing opportunities in the community itself, the participants recommended setting up of Community Colleges and Community Schools. They felt that 2,700 non-viable colleges existing in the country could be converted into Community Colleges.

The role of such Community Colleges was envisaged as :

(a) To identify the needs and resources of the community;

(b) To prepare an Action Plan to meet the needs;

(c) To motivate the community to participate in, execute, co-ordinate and monitor the Action Plan;

(d) To assist in the execution of the Action Plan;

(e) To prepare and execute Educational Programs to meet the needs of the community;

(f) To obtain feedback and evaluate the Action Plan and Educational Programs and modify them; and

(g) To initiate the necessary services in the community.

It was suggested that a committee comprising the College Principal, Sarpanch, a representative of the voluntary agencies, community educator and the Block Development Officer should oversee the working of the Community College. It was recommended that 50% of the members of the Committee should be women.

The participants suggested a phased programme for the conversion of non-viable colleges into Community Colleges.

Phase I : Introduction of courses leading to self-employment and improvement in employability with the formal exam system.

Phase II : Introduction of courses oriented to needs, employment and productivity. Here certificate courses with a credit system of evaluation may be used along with formal exams.

Phase III : Offer courses as in Phase II and additional courses catering to professional excellence. The timings of the classes are to be those suited to the community needs. Evaluation is to be based on credit system.

The participants stressed that the curriculum of the Community Colleges should be such as allows students to join the formal stream and vice-versa. It was also emphasised that a programme be launched for the preparation of Community Educators who will :

(a) teach in the Community Colleges;

(b) oversee the non-formal education of the community ;

(c) encourage the community to participate in educational programs ; and

(d) assist in initiating community services.

The participants suggested that in the first instance all non-viable colleges could be asked to introduce atleast one certificate course that will generate self-employment in their community. This could be done with the help of Department of Adult and Continuing Education of their universities.

36 teachers and experts from the Departments of Education, Adult and Continuing Education and Extension, Social Work and Agricultural Colleges from the 23 universities all over the country attended the Seminar.

[Contributed by R.H. Narang]

Council of Scientific & Industrial Research

RESEARCH PROPOSALS INVITED

CSIR is engaged in conducting research pertaining to Societal Missions and thrust areas. The Council invites research proposals from Faculty members and experts in academic institutions and recognised R & D Centres in public and private sectors which are, complementary/supplementary to the research efforts being made in the national laboratories in their Societal Missions and thrust areas. Funds can be provided for a worthwhile project to the extent of Rs. 6 lakhs for a period of 3 years.

CSIR would, however, continue to extend support to suitable good quality research projects in basic and applied areas of Science and Technology as before.

Applications forms and other details can be had from Deputy Adviser, EMR Division, CSIR Complex, Pusa, New Delhi-110 012, Telephone Nos. 588704, 588632.

Management Development Programme

The Department of Education Management of the S. N. D. T. Women's University, in collaboration with the Ministry of Human Resource Development, Government of India and the United States Agency of International Development, organised a two weeks' residential Management Development Programme for Women Administrators in Social Welfare Services. The objectives of the programme were to help participants to develop (i) Skills in diagnosing and assessing themselves and their group with reference to goals, purposes, expectations, structure, programmes, achievement and frustrations ; (ii) Skills and techniques in managing resources effectively; and (iii) Ability to analyse and evolve the social structure and relationships within that structure to further organisational effectiveness.

The programme was specially designed to improve effectiveness of Women Administrators in Social Welfare Services and the course content included :

(a) Self awareness and Interpersonal Relations-Organisational role, including understanding organisational structure and climate, goal setting and values, leadership, creating change, diagnostic abilities, communication and confrontation skills, counselling and helping skills feed-back and performance appraisal;

(b) Resource Management and Administration ;

(c) Staff Control Administration ;

(d) Managing Stress and Conflicts ;

(e) Creativity in designing programmes.

Twenty one candidates, possessing administrative experience were admitted to the course.

Fabricating Measuring Instruments

A Workshop on Fabrication of Measuring Instruments for College Teachers of Madhya Pradesh, jointly organised by the USIC and CW, the Department of Physics, Ravishankar University, and the RSIC, Nagpur University, was held at Raipur recently. The objective of the Workshop was to generate the confidence and expertise in the teachers of the colleges to enable them to fully utilise their training in fabricating, fault-finding and trouble-shooting of the instruments used in the laboratory. During the workshop, the participants fabricated three measuring instruments, viz., (1) Digital AC millivoltmeter (2) Audio Frequency Oscillator; and (3) Digital Multimeter. The designs of these instruments were prepared at the RSIC, Nagpur and each participant was given a self-contained manual which helped them to fabricate the instrument.

About 15 teachers participated in the workshop. In the first few days, one hour was devoted to give the participants background theory of the designs. The components were provided to the participants. After fabrication all instruments were tested and calibrated and the performance-reports were prepared. These instruments were presented to the colleges of the participants.

Computerised Dictionary for Sangam Literature

The Tamil University, Thanjavur, has undertaken the project "Computerised Dictionary making for Sangam Literature". The objective of this project is to feed all the sangam classics to the computer using transliteration procedure and storing them in a magnetic media. A software has been developed by the Computer Centre for splitting of words, processing and alphabetization in Tamil, indexing and printing in Tamil script, etc. It will help get an exhaustive index of all the 33,204 lines of sangam literature covering about 1,98,677 words. The exhaustive index provides words along with frequency of occurrences and also the context of occurrences with poetry and line numbers with all the citations in which the word occurs. This index is further used by the editors for editing to bring out the dictionary in a computer processable and printable form. It is also contemplated to bring out word indices and concordances for sangam literature within a very short span of time which otherwise will take several years when done manually.

Master in Theatre & Television

The Department of Dramatic Art of Punjabi University has been renamed as the Department of Theatre and Television and the degree being awarded by it will now be known as Master in Theatre and Television. By doing so, Punjabi University has become the the first University in Northern India to introduce such course.

This department is being restructured keeping in view the interchange and unity of the theatre, the electronic mass media and the cinema. The courses and syllabi for the two-year post-graduate degree have been modified to incorporate T.V. skills, etc. This also is being done in view of the growth of dramatic craft in the present context and to increase th employment potential of the degree holders in drama and theatre.

NCAER Offers Books

National Council of Applied Economic Research has offered a set of 20 publications to University and college libraries, and research organisations. These cover a wide range of subjects like Energy, Agriculture, Transport, Area Development Surveys, and other topics. The total cost of these books is Rs. 1,490/- but to enable students in universities and colleges and research scholars to make use of these publications, NCAER offers the complete set of 20 books for a nominal charge of Rs. 100/- to cover packing and forwarding charges.

Those interested to avail of the offer may send a demand draft of Rs. 100/- in favour of "National Council of Applied Economic Research" to the Publications Division, NCAER, 11, Indraprastha Estate, New Delhi-110002.

PG Diploma in Education Management

The S.N.D.T. Women's Univerity has instituted a Postgraduate Diploma course in Education Management from October 1987. It offers an opportunity to administrators in educational institutions to improve their individual performance as managers and enhance the effectiveness and efficiency of their organizations. Graduates with good academic record are eligible. Persons holding senior positions in universities, colleges and other educational institutions will be given preference. Further details can be had from Smt. Lena F. D'Souza, Head, Dept. of Education Management, SNDT Women's University, 1, Nathibai Thackersey Road, Bombay—400020."

News from Agril. Varsities

Biotechnology in Agricultural Development

Union Agriculture Minister G.S. Dhillon called for greater use of biotechnology in agricultural research to achieve a major breakthrough in the production of oilseeds, pulses and coarse grains. Mr. Dhillon was inaugurating a seminar on "Application of biotechnology in agriculture" organised by the Federation of Indian Chambers of Commerce and Industry (FICCI) in New Delhi recently.

Citing some of the areas where biotechnology could be effectively used, Mr Dhillon spoke of the potential of tissue culture techniques to improve production, particularly in the dryland areas. There was the need, he said, to combine high yield potential and drought tolerance for the crops grown in the rainfed areas which constituted 67 per cent of the cultivated area in the country.

Similarly, genetic engineering was one of the means to develop hybrid varieties of various crops. Until now development of hybrid varieties was possible only in a limited number of crops.

Breakdown of resistance to diseases and pests was another weak point which was often encountered in the conventionally bred crop varieties. Creating a wide genetic base for resistance within a cultivar was one method to obviate such eventualities. This could be achieved more rapidly by using modern tools of biotechnology.

Another area where biotechnology could play a vital role was biological nitrogen fixation. Scientists were of the view that the potentiality of increasing the biological nitrogen fixation for overall improvement of cropping systems was not being exploited even partially. Noting that the science of biotechnology was less developed in this country compared to advanced countries like the USA, the Soviet Union, West Germany and France, Mr Dhillon said a beginning was now made in initiating collaborate research programmes in different national institutes and leading agricultural and other universities in this country.

New Technology for Wheat Seed Treatment

A plant physiologist of the Indian Agricultural Research Institute (IARI), New Delhi, has developed a new technology of seed treatment of wheat before sowing which gives very high germination rate for the crop grown in rainfed areas or sown late such as the C-306 variety.

Studies carried out by Dr. R.J. Ojha, senior scientist, have led to the finding that if these seeds are soaked in about 40 per cent moisture and kept under very low temperature of three to five degrees celsius, for six to eight days, there is uniform germination taking place early by four-six days.

The treatment affected the entire life-cycle of the wheat plants and advanced the maturity date by six to eight days, with the result that this crop vacated the fields early for the next crop. This technique might be useful to farmers who sow wheat later than the normal dates (end of December to beginning of January after the potato harvest).

The new technique may be better than the existing one of complete dipping of seeds in water before sowing. This old practice results in the leaching (washing away) of essential nutrients from the seeds resulting sometimes in poor germination and growth.

Researching Indian Tabanids

The United States Department of Agriculture has sanctioned a research project "Taxonomic Studies of Indian Tabanids (Insecta: Diptera: Tabanidae)" to Dr. V.C. Kapoor, Professor of Zoology of the Punjab Agricultural University. It will run initially for a period of three years at a total cost of Rs. 5.8 lakh.

The tabanid flies suck blood of livestock, wild animals and human beings. On account of their blood-sucking habit, these are commonly called as horseflies, muleflies, deerflies, clegs, etc. These flies are responsible for causing serious diseases like anthrax, tularemia, Q-fever, filariasis, surra disease of horses, etc.

The project aims to find out the number of such tabanid flies in India along with their hosts and will help in understanding the species for veterinarians, medical specialists and the agriculturists.

Furrow Irrigation Method

The Seminar on 'Judicious use of pesticides and fertilizers' organised by the Cotton Research and Development Association, Haryana Agricultural University and the Department of Agriculture, Haryana has recommended adoption of furrow irrigation method to make the best use of available water as by doing so double the area will be irrigated with the same amount of water.

It was further recommended that the cotton crop should be sprayed with DAP plus sugar, 0.5% each every week. This would increase the drought tolerance power of the crop. According to Dr. M.S. Kairon, Secretary, Cotton Research and Development Association, it is essential to contro the weeds so that the effect of th drought can be minimised. H further said that to avoid dessication of the crop for want of rain irrigation frequent hoeings ar necessary. By this, the plants wil establish well and roots will go deeper and make best use of the available water in the soil. As fa as the control of bollworms is concerned, the seminar recommended spraying when more than 10% fruiting bodies are infested. Subsequent spraying should be done after every 15 days.

News from UGC

Fellowships in Federal Republic of Germany

The University Grants Commission (UGC) has invited nominations for the award of 12 fellowships for advanced studies and research at universities and research institutions in Federal Republic of Germany and in West Berlin for the year 1988-89.

These fellowships, which are of one year duration with the possibility of extension and are offered by the German Academic Exchange Service, are in the field of Natural Sciences, Humanities and Social Sciences (Linguistics, History, Philosophy, Sociology and Economics), Law and German Language and Literature. Two of the fellowships are earmarked for German Language and Literature.

While the fellowships for Natural Sciences, Humanities and Social Sciences and Law are open to staff members in the various Departments of Universities and their affiliated colleges, those for German Language and Literature are meant for teachers/students of German Language registered for Ph.D. with an Indian University and who wish to go to Germany for collection of additional material for their thesis.

The value of each fellowship will comprise free passage from New Delhi to place of study in F.R.G. and back, maintenance allowance @ DM 1440 p.m., exemption from payment of University fees, special clothing allowance (DM 400), baggage allowance (DM 150 each way), book allowance (DM 200 per year), additional allowance for incidental expenses (DM 200), allowance for compulsory health insurance and free tuition, boarding & lodging and pocket allowance, etc.

The last date for receipt of nominations by the UGC in the prescribed proforma is August 31, 1987. The Commission would also pay second class rail fare from the place of duty to New Delhi and back to the candidates called for interview.

News from Abroad

First Private University in Australia

Bond University the 21st to be established in Australia will enrol its first students, a group of postgraduate scholars, next year. The university hopes that up to 1,000 undergraduate students will enrol in 1989. Under a unique financial arrangement, Australians will be able to buy shares in the nation's first private university, the Aus $ 135 million Bond University being constructed on Queensland's Gold Coast.

Under the arrangements a public property trust, which will own the university's land and buildings, will be listed on national stock exchanges probably by 1990. The 180-hectare campus owned by the trust will take in all the university buildings, including student accommodation, retail and commercial buildings on the site, a reseach park and shopping centre. The park and shopping centre may be sold off eventually.

Bond Corporation owns 300 hectares of coastal pine forest south of surfers paradise and has set aside 180 hectares for the university. A Japanese company, EIE Development is believed to already have set aside Aus $30 million for the venture. Land around the university campus will be sold as residential development along with a technological park.

Bond University was established by an act of Queensland parliament in April as a non-profit institution. But under the unusual financial arrangements, investors will be able to buy units in the property trust, presumably in the expectation of getting a return on their investment. The academic side of the university will be administered by a non-profit company, although profit and income generation seemed to be the concept in the planning of the university.

Professor Watts, former vice-chancellor of the Curtain University of Technology in Western Australia, described Bond University as offering the most challenging opportunity in the history of Australian education. He said that with the founding of the new university Australian higher education could be said to "have come of age".

Bond university students will have to pay between Aus $8,000 and Aus $14,000 a year in tuition fees, plus living expenses, but Professor Watts had no doubts the university would quickly fill its initial quotas of students. He said the university intended that 50 per cent of its students should be Australian 30 per cent would come from south east Asia, 10 per cent from North America and 10 per cent from Japan.

Professor Watts is now on a tour of British and American higher education institutions to look at hospitality and tourism courses such as those run by the University of Surrey.

Humboldt Foundation International Scholarships

The German Alexander von Humboldt Foundation awarded scholarships to 1400 scholars last-year coming from 63 countries. They included 402 new scholarship holders, 535 scholars whose grants were extended and 286 who resumed earlier research work. Nearly half the Humboldt scholars came from five countries—Poland, Japan, the United States, India and China. Scientists, especially chemists and physicists, make up over 70 per cent of the total.

The aim of the fondation's scholarship programme is to promote international scientific cooperation. The decisive criteria in awarding grants are academic and scientific achievement and qualifications, a specific research project and a knowledge of German. Humboldt scholars are free in their choice of reserach project and when they propose to embark on it. There are no priorities where scientific disciplines are concerned and neither national nor regional quotas. Grants are awarded irrespective of nationality, religion or political views.

Since 1953, when the foundation resumed work interrupted by the Second World War, over 12,000 scholars from roughly 100 countries have been enabled to spend longer periods working on research projects in the Federal Republic of Germany. Great importance is attached to maintaining ties with former scholars once their projects are completed; lifelong links are maintained with past scholarship holders.

Digital X-Ray Unit

A unique digital X-ray unit has been put on test at the All-Union Research Centre of Mother and Child Care. It was designed at the Novosibirsk-based Institute of Nuclear Physics of the Siberian Department of the USSR Academy of Sciences. The radiation exposure dose of the new plant is 30 to 100 times less than in conventional units.

Unlike conventional plants which make use of film, the new unit is based on the so-called multiwire proportional chambers which are more sensitive than film and demand a smaller dose of radiation to procure all the necessary information. Mini-computers analyse then digital information obtained through X-raying and display it on the screen converted into black-and-white or colour images. Information recorded on the magnetic tape is fit for repeated use.

According to A. Volobuyev, head of the X-ray department of the Centre, the exposure to the new X-ray unit does not endanger either a woman or a fetus. The new plant is extremely useful in all complicated situations.

Learning to Teach

Syracuse University will launch a mandatory orientation and training program this summer for all new graduate teaching assistants to improve the quality of undergraduate education and enhance the graduate teaching experience.

"Many universities offer some form of orientation or training to some of their teaching assistants," said Karen Hiiemae, vice president for research and graduate studies. "What makes the Syracuse program so different is that we are saying to incoming students, 'We think your teaching role is an important part of your graduate education."

About 300 new graduate students will participate in the training sessions before the fall semester begins.

International students, who make up about a third of the new teaching assistants, will be asked to give an oral presentation about themselves and what they hope to accomplish at Syracuse. They also will be observed and tested by faculty to determine their English language skills.

"Emphasis will be placed on oral communication skills," said Ron Cavanagh, vice president for undergraduate studies. "This is a major change from the way language testing is usually done."

American graduate students later will join the international students at lectures and panel discussions.

"The great tragedy in American higher education is that all of us, whether teaching assistants or full-time faculty, have traditionally been thrown into classrooms to teach with no preparation or support," said Robert McClure, professor of political science. This is an extraordinarily inefficient and painful way to learn to teach."

[*Courtesy* : American Council on Education Newsletter, July 27, 1987.]

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CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
September 18-21, 1987	National Seminar on Energy Education	To discuss various aspects of energy education—meaning and scope, resources, institutionalisation, teacher preparation, curriculum development, and role of mass media.	Department of Education, Rohilkhand University	Dr. Beena Shah, Organising Secretary, NASEEZ, Department of Education, Rohilkhand University, Bareilly-243 001, U.P.
Sept. 21 - Oct. 4, 1987	Training Course in Research Methodology in Geography	To expose the participants to research methods in Geography and quantitative and cartographic techniques employed in Geographical research	Department of Earth Sciences, Manipur University, Imphal.	Dr. R.P. Singh, Dpartment of Earth Sciences, Manipur University, Imphal.
Novemher 14-16 1987	First Biennial Conference of the Allahabad Mathematical Society	It is proposed to cover Extension Problems in Topology, Number Theory, Cosmology and Statistics	Allahabad Mathematical Society, Allahabad	Professor P. Srivastava, Secretary, Allahabad Mathematical Society, 10, C.S.P. Singh Marg, Allahabad-2 11 001
November 16-20, 1987	Seventh National Symposium on Radiation Physics	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
November 19-21, 1987	Eighth Maharashtra Political Science Conference.	Main topics proposed to be discussed are: (1) National Integration; (2) Politics of Education; (3) Politics of World Peace; (4) Politics of Terrorism.	Nutan Mahavidyalaya, Sailu.	Sh. D.R. Kulkarni, Principal, Nutan Mahavidyalaya, Sailu - 431503 Dist. Parbhani. (Maharashtra).
November 25-27, 1987	International Conference on Mud Architecture	To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.	Ministry of Urban Development, Govt. of India, in collaboraton with the Govt. of Kerala, HUDCO and the All India Housing Development Association.	Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & & Urban Development Corporation, K.G. Road, Bangalore - 560 009.
November 26-28, 1987	International Seminar on Instrumental Methods of Electro-Analytical Techniques.	To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electro-analysis.	Indian Institute of Science, Bangalore.	Prof. M.H. Dhananjaya, Principal and Chairman of the Organising Committee, S.J. College of Engg., Mysore.
December 7-11, 1987	Seventh Triennial International Conference on Thin Films. (ICTF-7)	To take stock of recent progress in the field of science, technology and applications of their films.	Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.	Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.

SPORTS CALENDAR

INTER-UNIVERSITY TOURNAMENTS

1987-88

GAMES ON ALL INDIA BASIS

S. No.	Game	Org. Univ.	August	September	October	November	December	January	Last date of receiving datailed entries
1.	Athletics (M&W)	Punjabi	—	—	—	30th (CE)	—	10th (C)	January 1
2.	Ball Badminton (M)	Annamalai	—	—	—	15th (CE)	—	4th (C)	—
3.	Ball Badminton (W)	Vacant	—	—	—	—	3rd (CE)	17th (C)	—
4.	Boxing	M. Dayanand	—	—	—	—	2nd (CE)	8th (C)	December 29
5.	Cricket (W)	G.N.D.	—	—	23rd (CE)	—	7th (C)	—	—
6.	Cross Country Races (M&W)	Panjab	—	25th (CE)	18th (C)	—	—	—	October 10
7.	Cycling (M&W)	Vacant	—	—	—	—	3rd (CE)	9th (C)	—
8.	Gymnastics (M&W) & Malkhambh	Vacant	—	—	27th (CE)	—	10th (C)	—	November 30
9.	Rowing (M&W)	Calcutta	—	—	7th (CE)	25th (C)	—	—	November 15
10.	Squash Rackets	Vacant	—	—	—	—	1st (CE)	15th (C)	—
11.	Swimming (M&W) & Water Polo	Calcutta	25th (CE)	—	10th (C)	—	—	—	September 30
12.	Tennis (W)	Mangalore	—	—	—	—	1st (CE)	16th (C)	—
13.	Wt. Lifting & Best Physique	Vikram	—	—	19th (CE)	—	1st (C)	—	November 21
14.	Wrestling	Mysore	—	24th (CE)	—	5th (C)	—	—	October 26

GAMES ON TWO-ZONE BASIS

S. No.	Game	Org. Uny.	Zone	August	September	October	November	December	January
*1.	Basketball (W)	Kurukshetra	NEZ & IZ	—	16th (CE)	Last	Week & 1st Week (CIZ 3rd)	—	—
		Sardar Patel	SWZ						
2.	Chess	Vacant	NEZ & IZ	—	1st (CE)	—	—	1st fortnight (CIZ 12th)	—
		Vacant	SWZ						
*3.	Handball (M&W)	HAU	NEZ	—	—	—	30th (CE)	—	2nd fortnight (CIZ 26th)
		Kakatiya	SWZ & IZ						
*4.	Hockey (W)	Kashmir	NEZ	—	15th (CE)	2nd fortnight (CIZ 30th)	—	—	—
		Marathwada	SWZ & IZ						
*5.	Kabaddi (W)	Calcutta	NEZ	—	15th (CE)	—	1st & 2nd weeks (CIZ 12th)	—	—
		Poona	SWZ & IZ						
*6.	Kho-Kho (M)	BHU	NEZ & IZ	—	—	—	20th (CE)	—	1st & 2nd weeks (CIZ 12th)
		Gujarat Agril.	SWZ						
*7.	Kho-Kho (W)	GND	NEZ & IZ	—	—	—	—	1st (CE)	2nd fortnigh (CIZ 28th)
		Baroda	SWZ						
8.	Tennis (M)	Lucknow	NEZ & IZ	—	—	—	30th (CE)	—	2nd fortnight (CIZ 28th)
		Annamalai	SWZ						
*9.	Volleyball (W)	Delhi	NEZ	—	—	15th (CE)	—	1st fortnight (CIZ 12th)	—
		Karnatak	SWZ & IZ						

GAMES ON FOUR-ZONE BASIS

S. Na.	Game	Org. Univ.	Zone	August	September	October	November	December	January
1.	Badminton (M&W)	Jammu	NZ	—	—	15th (CE)	—	2nd fortnight (CIZ 28th)	—
		CUAT	EZ						
		Andhra	SZ & IZ						
		Bombay	WZ						
*2.	Basketball (M)	Jamia Millia	NZ & IZ	—	—	15th (CE)	—	1st fortnight (CIZ 12th)	—
		BIT (Ranchi)	EZ						
		Osmania	SZ						
		Jodhpur	WZ						
*3.	Cricket (M)	Kurukshetra	NZ & IZ	—	—	—	4th (CE)	From 20th	upto 20th (CIZ 12th)
		Calcutta	EZ						
		Madras	SZ						
		Vacant	WZ						
*4.	Football (M)	Kashmir	NZ	—	1st (CE)	2nd fortnight &	1st week (CIZ 1st)	—	—
		Kalyani	EZ & IZ						
		Gandhiji	SZ						
		Dr. H. S. Gour	WZ						
*5.	Hockey (M)	Panjab	NZ & IZ	—	—	—	17th (CE)	—	3rd to 23rd (CIZ 16th)
		Sambalpur	EZ						
		Bangalore	SZ						
		Amravati	WZ						
*6.	Kabaddi (M)	G. B. Pant	NZ	—	—	1st (CE)	2nd fortnight (CIZ 27th)	—	—
		Vacant	EZ						
		Madurai Kamaraj	SZ						
		Shivaji	WZ & IZ						
7.	Table Tennis (M&W)	Vacant	NZ	—	—	15th (CE)	—	1st fortnight (CIZ 12th)	—
		L.N. Mithila	EZ						
		Madras	SZ & IZ						
		D.A.V., Indore	WZ						
*8.	Volleyball (M)	Aligarh	NZ	—	7th (CE)	Last week &	1st week (CIZ 5th)	—	—
		Bhagalpur	EZ & IZ						
		Mysore	SZ						
		Rajasthan	WZ						

Note : *1. These tournaments shall be played on league basis from the Zonal Semi-Final Stage.

2. Inter-Zonals of the tournaments in the games of Basketball (W), Handball (M&W), Hockey (W), Kabaddi (W), Kho-Kho (M&W) and Volleyball (W) run on two-zone basis shall be played on league basis.

3. Inter-Zonals of the tournaments in the games of Basketball(M), Football, Hockey (M), Kabaddi (M) and Volleyball (M) run on four-zone basis shall be played on league-cum-knock-out basis.

4. Inter-Zonals in respect of Cricket (M) shall be played on knock-cum-knock out basis.

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Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

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RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

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Sociology

1. Basil, Laila. *Adjustmental problems of return migrants.* Gandhiji. Dr. George Koilparambil.

2. Singh, Ram Lakhan. *Role of cooperatives for rural development in Indore District, Madhya Pradesh.* Devi Ahilya. K.P. Pothan.

Political Science

1. Bakshi, Kavita. *India's contribution towards non-aligned struggle against apartheid from Havana to Harare.* Devi Ahilya. Dr. O.P. Nagpal.

2. Chandra Bahu, B. *Achutha Menon as a coalition Chief Minister : Politics policies and implications, 1969-1977.* Gandhiji. Dr. Cyraic Thomas.

3. Joseph, T.M. *Political modernisation among tribals in Kerala : A case study of Kanikkars in Trivandrum District.* Kerala. Dr. N. Jose Chander.

4. Kumbhojkar, Rajkumar Manohar. *The Independent Labour Party : A study.* Shivaji. Dr. K.K. Kawalekar.

5. Rajendran Pillai, V. *Socio-political changes in rural Kerala during the sixth plan : An anatomy of development administration.* Kerala. Dr. G. Gopakumar.

6. Ramakrishnan, A.K. *United States perceptions on Iran : A study on orientalism.* Gandhiji. Dr. C.V. Cherian.

Economics

1. Azimi, Aghabagher Fereidoon. *Petro chemical industry in Iran : Problems and prospects.* Shivaji. Dr. T.G. Naik.

Education

1. Bhawalkar, Smita. *Prediction of scientific creativity through cognitive and affective variables among high school students.* Devi Ahilya. Dr. D.N. Sansanwal.

2. Bose, N. *Preparation and testing of instructional strategies for the development of certain higher skills for learning at plus two stage.* Kerala. Dr. K.R. Sivadasan.

3. Gaur, C.B. *A study of educational opportunities offered and actually availed by scheduled tribes in the light of cultural patterns of the sub-communities of scheduled tribes in Rajasthan.* Banasthali. Dr. C. B. Mathur.

4. Goyal, Sushil Kumar. *A study of cooperative behaviour of school teaching staff.* Banasthali. Dr. C.B. Mathur.

5. Mollykutty, T.M. *Implementation requisites for modular approach in teacher education.* Kerala. Dr. Vasantha Ram Kumar.

6. Sharma, Gopi Nath. *Hindi nai Kavita ke prateek vidhan ka kishore chhatra-chhatraon dwara awabodh.* Banasthali. Dr. L.K. Oad.

7. Singh, Mithelesh Kumari. *Constraints affecting Indian women's participation in games and sports.* Banasthali. Dr. L.K. Oad.

8. Upadeh Kumari. *Behaviour patterns of prospective teachers with high and low aptitude for teaching.* Banasthali. Dr. R.P. Singh.

9. Vijayakumar, B. *Development of optimal models for plus two level chemistry curricula relevant for Kerala.* Kerala. Dr. T.N. Vedamani Manuel.

Commerce

1. Ambilikumar, V. *Working of small scale industries in Kerala with reference to Trivandrum District.* Kerala. Dr. M. Sarangadharan.

2. Joseph, Babu. *An evaluation of the working of lead bank scheme in Kerala.* Kerala. Dr. C.N. Purushothaman Nair.

3. Khot, Babaso Appu. *Industrial development of Sangli District.* Shivaji. Dr. P.S. Rao.

4. Sasidharan, K. *Growth of banking in Kerala since independence.* Kerala. Dr. C.N. Purushothaman Nair.

5. Sudharamani, G. *Export trade of traditional items in Kerala : Problems and prospects.* Kerala. Dr. C.N. Purushothaman Nair.

6. Thomas, P.C. *Problems and prospects of village industries in Kerala.* Kerala. Dr. M. Sarangadharan.

7. Thorat, Narayan, R. *A study of employees' job satisfaction and its impact on organisational climate with reference to selected industrial units in Kolhapur.* Shivaji. Dr. P.S. Rao.

8. Varghese, Rajan. *Bank overdues in priority sector lending with emphasis on IRDP.* Kerala. Dr. C.N. Purushothaman Nair.

HUMANITIES

Fine Arts

Music

1. Devendra Kumar. *Natyashastra kee sangeetik avadharnaon ka saundarya shastriya adhyayan.* Banasthali. Dr. R.D. Verma.

2. Saxena, Usha. *Brij mein sangeet kee parampara, udabhav aur vikas.* Banasthali. Dr. R.D. Verma.

3. Singh, Niharika. *Soorsagar ka sangeetik mulyankan.* Banasthali. Dr. R.D. Verma.

4. Vyas, Madhu. *Tanseni mat aur Hindustani sangeet.* Banasthali. Dr. P.N. Chhinchhore and Dr. C.L. Sharma.

Language & Literature

English

1. Abraham, M.Y. *The analysis of Rhetoric figures in Indian and Western tradition : A linguistic stylistic study.* Gandhiji. Dr. A.P. John.

2. Aerathu, Vincent. *The poetry of William Carloo Williams : A study of pastoral and urban traditions.* Gandhiji. Dr. Mathew Joseph.

3. Annie Margret, P. *The quest for black identity in the novels of Richard Wright.* Gandhiji. Dr. Mathew Joseph.

4. Desai, Chaitanya J. *Social consciousness in contemporary, British drama with special reference to the plays of Arnold Wesker, John Arden, Robert Bolt and Shelagh Delaney.* S. Gujarat. Dr. N.M. Rao.

5. Goyal, Kunj Bala. *Language and theme in Anita Desai's longer fiction.* Banasthali. Dr. S. Wali and Dr. C.L. Sharma.

6. Ozhakal, Pius. *The fictional world of Edith Wharton and Henry James with special reference to their Gothic stories.* Gandhiji. Dr. Mathew Joseph.

7. Sebastian, Thomas. *English literature, themes and concerns in the poetry of John Crowe Ransom.* Gandhiji. Dr. Mathew Joseph.

8. Supriya, A.R. *English loan words in Malayalam : A study based on journalistic language.* Gandhiji. Dr. A.P. John.

Sanskrit

1. Badeni, Govind Ram. *Pramukh upanishadon mein Achartatva mimmansa.* Panjab. Dr. Dharmanand Sharma.

2. Baid, Sharda. *Vijay Varnikrit, Sharangaravaran Chandrika ka sameekshatmak adhyayan.* Banasthali. Dr. C.K. Goswami.

3. Gupta, Radha. *Bhartiya darshan ke kshetra mein yog vashisht ka yogdan aur vartman sandarbh mein iski prasangikta. D. Litt.* Devi Ahilya.

4. Kansal, Sadhna. *Vigyan bhikshu ke vedant sidhhanton ka sameekshatmak adhyayan.* Banasthali. Dr. M.M. Agarwal.

5. Kusum Lata. *Mahakavi Bhavashuti ke natakon mein bimb-yojna.* Panjab. Dr. Ghanshyam Sharma.

6. Lohar, Ram Krishna. *Maharishi Dayanand ke granthon mein pratipadit arthik vichar dhara.* Panjab. Prof. B.L. Bhartiya.

7. Neeru Rani. *Shri Vatsalanchhan Bhattacharya kee kavya shastriya krityon ka adhyayan.* Banasthali. Dr. C.K. Goswami.

8. Nirotma. *Maharishi Dayanand pranit granth shastrarth evam pravachan : Ek sameekshatmak adhyayan.* Panjab. Prof. B.L. Bhartiya.

9. Panda, Narasingha Charan. *Contribution of Maharishi Dayanand Saraswati and Arya Samaj to Vedanta literature.* Panjab. Prof. B.L. Bhartiya.

10 Sharma, Shakti Dharma. *Upanishadon aur Geeta mein yog tatva : Patanjal yogdarshan ke pariprekshaya mein.* Panjab. Dr. Ghanshyam Sharma.

11. Sharma, Shanti Kumar. *Rishi Dayanand ke granthon mein yagya ka swarup.* Panjab. Prof. B.L. Bhartiya.

12. Sharma, Suman. *Purano mein Saraswati va Lakshmi : Ek adhyayan.* Banasthali. Dr. Bharti Pandey.

13. Shukla, Shiwani. *Sanskrit sahitya mein mahilaon ka yogdan : Sarvekshan evam sameekshatmak adhyayan, vedic kal se satrahveen sadi tak.* Banasthali. Dr. C.K. Goswami.

14. Vashistha, Shubra. *Sripati Panditacharya ka tatva darshan.* Banasthali. Dr. M.M. Agarwal.

Punjabi

1. Amrit Kaur. *Asa di var vich samajak chetna.* Panjab. Prof. Attar Singh.

2. Bhupinder Kaur. *Punjabi novel da udbhav, roopakarkovikas.* Panjab. Dr. Kesar Singh Kesar.

3. Charanjit Kaur. *Dalip Kaur Tiwana te Amrita Pritam de navalan de nari patran da tulnatmak adhyayan.* Panjab. Dr. (Mrs) Kulwant Kaur Kohli.

4. Gill, Kuldeep Kaur. *Amrita Pritam de novelan dian niyakavan da vishleshanatmak adhyayan.* Panjab. Dr. Hardev Singh Sachar.

5. Harpreet Kaur. *Sohan Singh Sital de navalan vich pendu jeewan da chitran.* Panjab. Dr. Kartar Singh Suri.

6. Jagir Singh. *Dr. Diwan Singh Kalepani : Chintan te kala.* Panjab. Dr. Kesar Singh Kesar.

7. Jasbir Kaur. *Narinder Pal Singh de ithasik novel.* Panjab. Dr. Kartar Singh Suri.

8. Kalwant Singh. *Balwant Gargi ate Kapur Singh Chaman de dukhant natak : Ek alochnatmak adhyayan.* Panjab. Dr. Raghbir Singh.

9. Surjeet Kaur. *Yatharthvad te Kulwant Singh Virk dee kahani-kala.* Panjab. Dr. Kesar Singh Kesar.

Hindi

1. Dixit, Nityagopal. *Mandla Jile ke adivasi lok sahitya ka anusheelan.* HS Gour. Dr. B.D. Mishra.

2. Dubey, Pramodini. *Linguistic study of the descriptive grammar of Hindi verbs and adverbs.* Banasthali. Dr. C.L. Sharma.

3. Gupta, Nirmla. *Varnashram Sambandhi mulyon ke sandarbh mein Ramcharitmanas ka adhyayan.* Panjab. Prof. D.P. *Maini.*

4. Hada, Brij Raj Singh. *Dr. Rangeya Raghav ke katha sahitya mein yug-chetna.* Banasthali. Dr. L.C. Jain.

5. Harbans Lal. *Sathottari Hindi kahani mein janvad.* Panjab. Dr. Yash Gulati.

6. Jat, Hari Chand. *Shri Lakshmi Chand ke ragini sahitya ka adhyayan.* Panjab. Prof. D.P. Maini.

7. Mathew, K.M. *Nirmal Varma ke katha sahitya mein astitwavadi darshan.* Gandhiji. Dr. N.K. Joseph.

8. Mathew, M.M. *Chhayavad aur Paravarti Hindi kavita mein vyaktivadi aur palayanvadi pravritiyan.* Gandhiji. Dr. N.K. Joseph.

9 Prabhakar, Sangita. *Hindi ke lalit nibandhon mein sanskritik mulya : Purvkathan evam prarup.* Panjab. Prof. D.P. Maini.

10. Raju, T.D. *Jagadish Chandra Mathur ke natakon mein vyangya.* Gandhiji. Dr. N.K. Joseph.

11. Rao, Saroj. *Navjagran ke sandarbh mein Bhartendu Harish Chander aur Maithilisharan Gupta Ke kavya ka tulnatmak adhyayan.* Panjab. Prof. M.P. Bhardwaj.

12. Sharma, Vidya. *Jaishankar Prasad ke katha-sahitya mein samajik manav mulya.* Panjab. Prof. D.P. Maini.

13. Thomas, Lally. *Usha Priyamvada ke katha sahitya mein nari samasyayen.* Gandhiji. Dr. N.K. Joseph.

14. Urmila Rani. *Swatantrayottar Hindi prabandhkavyon mein rashtriya sanskritik chetna.* Panjab. Dr. Laxmi Narain Sharma.

15. Vashistha, Mani. *Hindi ekanki kee parampara aur Dr. Ram Kumar Verma.* Banasthali. Dr. L.C. Jain.

16. Verma, Kusum Lata. *Hindi novelon ka Varnatmak vyakarna.* Banasthali. Dr. C.L. Sharma.

Malayalam

1. Daniel, Mathew. *Christian ethos in the novels of Perappurathu.* Kerala. Dr. P.V. Veleyudhan Pillai.

2. Mariam, A. *Edappalli kavitha oru padhanam.* Kerala. Dr. D. Benjamin.

3. Sankara Narayana Pillai, P.K. *Narrative poems in Malayalam : A critical study.* Kerala. Dr. K. Ramachandran Nair.

4. Saradekutty, S. *Characterisation in attakatha.* Kerala. Dr. N. Mukundan.

5. Venugopal, Nair, S.V. *Satire as an element of style and structure in Malayalam novel.* Kerala. Dr. K. Ramachandran Nair.

History

1. Gupta, Manju. *Rashtra vibhuti Jamna Lal Bajaj : Ek adhyayan.* Banasthali. Dr. Pema Ram.

2. Nair, Lokha K. *Treatment of history in the works of Sardar K.M.* Panicker. Kerala. Dr. T.K. Raveendran.

3. Sudarshan Devi. *The economic condition of Erstwhile Jodhpur State in 19th century.* Banasthali. Dr. Pema Ram.

4. Vidyavathy, C.B. *The techniques of non-violent sathyagraha as applied to Kerala politics with special reference to Vaikem sathyagraha.* Kerala. Dr. T.K. Raveendran.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Library Science

1. Malhotra, Harpal Kaur. *Use of Punjab Agricultural University Library and Haryana Agricultural University Library by post-graduate students : A comparative study.* Panjab.

2. Nahar, Nurun. *National Library of Bangladesh : Retrospect and prospect.* Kerala.

3. Saha, Karuna. *Factors related to organisational effectiveness : A study based on special and academic libraries.* IIT, New Delhi.

Psychology

1. Jaiswal, Arun Kumar. *Effect of nutritional and environmental restrictions on learning and exploratory behaviour o albino rats.* BHU.

2. Sahoo, Rabindranath. *Reading achievement and verba processing ability of achieving and non-achieving readers* Utkal.

3. Verma, Suman. *Problem solving as related to intelligence and personality in socially deprived and non-depriv children.* Panjab.

Sociology

1. Manjit Singh. *Industrialisation, working class formation and Trade Union Movement in Ludhiana.* Panjab.

2. Virendra Bahadur. *Harijan kaleen bunkaron kee samajik arthik dasha : Bhadohi kshetra ke grameen anchal per adharit ek samajvaigyanik adhyayan.* BHU.

Political Science

1. Apte, Prabha. *Legislation by ordinance.* SNDT.

2. Roy, Dipika. *The social and political ideas of Ramendrasundar Trivedi.* Calcutta.

Economics

1. Dube, Geeta. *Jhabua Jile kee arthvyavastha mein adivasi mahilaon ka yogdan.* Vikram.

2. Jain, Vimla. *Madhya Pradesh mein anusuchit va vanijya bankon dwara prathmikta prapt kshetron* (*sectors*) *ko dee gayee vittiya sahayata ka pichhare huye bhaugoulik kshetron* (*region*) *ke vishesh sandarbh mein mulyankan, 1972-82.* Durgawati.

3. Lalji Ram. *Uttar Pradesh Sarkar ke vikas vyaya kee pravriti.* BHU.

4. Singh, Jitendra Bahadur. *Institutional finance in Indian agriculture.* BHU.

5. Venkiteswaran, S. *The performance of cooperative banks in Kerala : A study on the operational efficiency of agricultural credit societies.* Kerala.

Law

1. Mohd. Nasimul Haque. *The taxation of firms under the Indian Income Tax Act, 1961.* BHU.

Education

1. Ajmer Singh. *Normative study of physical fitness of Panjab University students.* Panjab.

2. Nelson, D. *A study of the possibility of using the agencies of formal education for the practice of non-formal education in Kerala.* Kerala.

3. Phothichung, Chanchai. *Assessment of physical fitness of lower secondary school boys of Thailand.* Panjab.

4. Ramachandra Rao, V. *Relative effectiveness of two models of teacher preparation at the primary level in Karnataka.* Karnatak.

5. Roy, Jayanti. *A study of some of the correlates of reading ability amongst primary school children of Delhi.* JNU.

6. Tripathi, Shashi Kant. *Do piriyon ke adhyapakon ke jeewan mulya : Vyavsayik abhivriti evam samayojan ka adhyayan.* BHU.

Commerce

1. Jena, Iswar Chandra. *A study of lead bank scheme in Orissa.* Utkal.

2. Kulkarni, Savita. *Earnings variability and corporate growth in selected manufacturing industries in India.* Delhi.

3. Parida, Jayanta Kr. *An evaluation of incentive scheme in the Rourkela Steel Plant : A case study.* BHU.

4. Tripathi, Asha Ram. *Bank financing of industries in India.* BHU.

Management

1. Bajracharya, Pushkar. *Marketing strategies in public and private sector manufacturing industries : A comparative study.* Delhi.

2. Gopalakrishnan Nayar, K. *Problems and prospects of marketing Indian Cardamom at home and abroad.* CUST.

3. Pathak, Mohan Pd. *An achievement profile of the management graduates of Banaras Hindu University.* BHU.

4. Sharma, R.L. *Role of Government in industrial development of Rajasthan.* Rajasthan.

5. Srilatha, P. *Organisational stress at middle level management with reference to certain organisational and personality correlates in select public and private enterprises.* Osmania.

6. Vijaya Kumar, Gorrela Veera Venkata. *Performance appraisal : A comparative study of selected industries in Visakhapatnam.* Andhra.

INDIAN INSTITUTE OF SCIENCE

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R (IA) 308-32/87 REGISTRAR

CLASSIFIED ADVERTISEMENTS

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PATIALA

Advt. No. 34/Rect./PRO

Applications are invited for the following posts on the prescribed form available from Head, Publication Bureau, Punjabi University, Patiala, on payment of Rs. 5/- by sending a crossed IPO drawn in favour of the Registrar, alongwith a self-addressed envelope of the size of 25 x 10 cms. stamped with postage worth Rs. 3.40 and superscribed at the top, Application for the post of——— so as to reach the undersigned by **31st August, 1987** and through proper channel within 10 days thereafter :

1. DEAN, COLLEGE DEVELOPMENT COUNCIL :

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NOTE

1. Candidates must possess working knowledge of Punjabi.

2. The Selection Committee might relax the qualifications and experience in exceptional cases.

3. The Vice-Chancellor could also place before the Selection Committee names of suitable persons, who have not applied for these posts.

4. Those who have applied earlier for the post of Dean, College Development Council, need not apply again.

REGISTRAR

DEVI AHILYA VISHWAVIDYALAYA, INDORE

University House
Indore—452 001

No. Estt./III/(7)/87 Dated : 29.7.1987

Employment Notice

Applications on the plain paper stating name, qualifications, experience etc. are invited for the post of University Librarian (who is not the Head of Teaching Deptt.) in the revised scale of pay Rs. 3200-100-3500-125-4500/- so as to reach the undersigned on or before **31.8.1987.**

2. **Minimum Qualifications**

(a) First or Second Class Master' degree in any discipline plus first o second class M. Lib. Sc.

(b) At least 10 years experience a Librarian in a College or Assistan Librarian in a University or of working in a responsible professional capacity i a University Library.

3. Working knowledge of Hindi i essential.

4. In addition to the Pay, D.A., H.R.A., C.C.A., Medical Allowance and C.P.F. benefits as per University Rules are also payable. A higher start can be given to deserving candidates. The present total emoluments on initial basic salary in the scale is Rs. 3925/- p.m.+ C.P.F.

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6. Candidates already in service should apply through proper channel.

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8. The University reserves the right to alter the number of Posts and to fill-up or not to fill up the post and/or to call only selected candidates for interview at their own cost.

C. P. Modi
REGISTRAR (Exam.)

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HAMIRPUR (H.P.) - 177 001

Invites applications for the following posts :

I. Professors in the Pay Scale of Rs. 1500-2500 (UGC)

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(b) Mechanical Engineering 1 No.

(c) Electronics and Communication Engineering. 1 No.

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Essential

1. **Basic** : Bachelor's Degree in appropriate branch of Engineering recognised the University with atleast Ist class at Bachelor's Degree and/or Master's Degree level.

2. Doctorate Degree in concerned branch of Engineering/specialisation of subject in appropriate branch of Engineering recognised by the University.

3. Atleast 10 years experience in teaching and/or research in an Institution of University standard.

4. Experience of guiding research at Doctorate level.

Desirable

1. Professional Scientific/Research work of outstanding merit.

2. Experience in curriculum development.

3. Published work of high standard.

4. Membership of Professional bodies.

5. Age below 35 to 50 Years.

II. Assistant Professors in the Pay Scale of Rs. 1200-1900 (UGC)

(a) Electrical Engineering 1 No.

(b) Mechanical Engineering 1 No.

(c) Electronics and Communication Engineering. 1 No.

Educational Qualifications

Essential

1. A first class (or equivalent) Master's Degree/Doctorate Degree in appropriate field of Engineering/Technology.

2. Consistently good academic record with a Bachelor's degree in appropriate branch of Engineering/Technology. First Class at Bachelor's Degree and/or Master's degree level.

3. Atleast 5 years experience in teaching/Research in an Institute of University standard.

Desirable

1. Professional/Scientific/Research work of outstanding merit.

2. Experience in curriculum development.

3. Published work of high standard.

4. Membership of professional bodies

5. Age below 45 years.

III. Lecturer in the Pay Scale of Rs. 700-1600 (UGC)

(a) Electrical Engineering 1 No.

Educational Qualifications

Essential

1. Master's Degree in appropriate field in Engineering/Technology.

2. Consistently good academic record with a Bachelor's Degree in appropriate branch of Engineering/Technology Ist class at Bachelor's Degree and/or Master's Degree.

3. One year's experience in teaching/research in an institution of University level.

4. Age below 45 Years.

Note : (i) If the candidate with above noted qualification is not available, a candidate with first class Bachelor's Degree in appropriate branch of Engineering/Technology with consistently good academic record may be considered. Such a candidate should obtain Master's Degree in Engineering/Technology within a period of 5 years failing which his/her services shall be terminated.

(ii) Other things being equal, preference will be given to the candidates belonging to Scheduled Caste/Scheduled Tribe candidates for appointment to the post of Lecturer.

IV. Junior Scale Stenographers in the Pay Scale of Rs. 510-880, Rs. 30/- S.P. (Three Posts) One Post Reserved for Scheduled Tribe, One for Scheduled Caste IRDP and one for General I.R.D.P. Categories.

Educational Qualifications

Essential

1. Matric with two years experience with a minimum typing speed in English and Hindi of 35 and 30 w.p.m. respectively and Shorthand in English with speed of 100 w.p.m. and in Hindi 80 w.p.m.

2. Age, 18 to 32 years.

V. Steno-Typist (One Post) in the Pay Scale of Rs. 400-600 Plus Rs. 25/- Special Pay.

Educational Qualifications

1. Matric with one year experience in the line preferably in a University or College with a minimum typing speed in English 30 w.p.m. and in Hindi of 25 w.p.m. respectively and Shorthand in English with a speed of 100 w.p.m. and in Hindi 80 w.p.m.

2. Age, 18 to 32 years.

Other Terms and Conditions

The posts shall carry the allowances

as admissible by the State Government of Himachal Pradesh/approved by the Board of Governors from time to time.

Candidates in Government Service/ Semi Government service, Public undertaking must apply through proper channel.

Age limit relaxable in case of well qualified candidates.

No rail/bus fare or TA/DA will be paid to the candidates appearing for interview.

The applications should reach the office of Principal, Regional Engineering College, Hamirpur (HP)-177 001 by **30.9.1987**.

The candidates should attach with application a self addressed envelope 4''x10'' duly stamped worth Rs. 5.25 superscribed 'APPLICATION FOR THE POST OF (NAME OF THE POST) REGIONAL ENGINEERING COLLEGE'.

The application should be typed, giving the name of candidate, Father's name, date of birth, address for correspondence, permanent address, Educational qualifications, category o which belongs, etc. The photostat attested copies of testimonials (duly attested by the candidate himself) alongwith a recent passport size photograph should be attached with the applications.

The Principal reserves the right to increase or decrease the number of posts.

Each application should accompany a crossed Postal Order in the name of Deputy Registrar (Accounts), Regional Engineering College, Hamirpur(HP) amounting to Rs. 7.50 paise. No. draft/ cheque shall be accepted. In the event candidate not being called for interview or not being selected for the particular post, the Postal Order shall stand forfeited to the Regional Engineering College.

TATA INSTITUTE OF SOCIAL SCIENCES

DEONAR, BOMBAY 400 088

Applications are invited, **in the prescribed form only**, which can be obtained from the above address, along with details regarding qualifications, experience, etc. laid down either in person or by post along with a stamped (Rs. 2.00) self-addressed envelope superscribed "REQUEST FOR APPLICATION FORM FOR TEACHING POSTS".

I. **Professors** (three posts) in the pay scale of Rs. 1500-60-1800-100-2000-125/2-2500. **One** in the Department of Personnel Management and Industrial Relations; **one** in the Research Unit for Research and Consultancy in Social Policy and Social Welfare Administration; and **one** in the Research Unit for Sociology of Education.

II. **Readers** (fourteen posts) in the scale of pay of Rs. 1200-50-1300-60-1900. **One** in the Department of Family and Child Welfare; **one** in the Department of Personnel Management and Industrial Relations; **one** in the Department of Research Methodology; **one** in the Department of Social Welfare Administration; **one** in the Department of Urban and Rural Community Development; **one** in the Department of Extra Mural Studies; **one** in the Research Unit for Child and Youth Research; **one** in the Research Unit for Sociology of Education; **one** in the Research Unit for Urban Studies; **two** in the Research Unit for Rural Studies; **one** in the Research nit for Family Studies; **one** in the Research Unit for Women's Studies; and **one** in the Research Unit for Research and Consultancy in Social Policy and Social Welfare Administration.

III. **Lecturers** (seven posts) in the scale of pay of Rs. 700-40-1100-50-1600. **One** in the Department of Criminology and Correctional Administration; **(reserved for SC candidates)**; **one** in the Department of Extra Mural Studies **(reserved fer SC candidates)**; **one** in the Research Unit for Rural Studies; **one** in the Department of Urban and Rural Community Development **(reserved for ST candidates)**; **one** in the Research Unit for Sociology of Education; **one** in the Research Unit for Women's Studies; **one** in the Research Unit for Social Policy and Social Welfare Administration **(reserved for SC candidates)**.

IV. **One** post of **Librarian** in the scale of pay of Rs. 1500-60-1800-100-2000-125/2-2500.

V. **One** post of **Senior Producer** in the Audio-Visual Unit in the pay scale Rs. 1200-50-1300-60-1900.

VI. **One** post of **Producer** in th Audio-Visual Unit in the scale of pay o Rs. 700-40-1100-50-1600.

VII. **One** post of **Managing Edito** (Equivalent to READER) in the Publica-tions Department in the pay scale o Rs. 1200-50-1300-60-1900.

VIII. **One** post of **Assistant Managin Editor** (Equivalent to Lecturer) in the Publications Department in the scale o pay of Rs. 700-40-1100-50-1600.

In case SC/ST candidates are no available, applicants from other categories may be considered for appointment on a temporary **basi** for a period of six months, extendable to another six months, beyond which, if no SC/ST candidate applies, the person in the general category may be placed on probation, provided that the Selection Committee finds him/her suitable for appointment against the de-reserved post.

The pay scales of Rs. 1500-2500; Rs. 1200-1900; Rs. 700-1600 are likely t be revised to Rs. 4500-7300; Rs. 3700-530 and Rs. 2200-4000, respectively, subjec to fulfilling the conditions laid down b the Government of India for the revisio of the pay scales and the scales bein accepted by the Institute. The tota emoluments at the minimum of these pay scales are Rs. 3595/-; Rs. 3152/- an Rs. 2254/- respectively.

The last date for receipt of filled i application form is **10.9.1987**.

N. Krishnamoorthy
REGISTRAR

INDIAN INSTITUTE OF TROPICAL METEOROLOGY

PUNE 411 005

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These are open to scholars both in Research Institutes and the Universities preferably on subjects with inter-disciplinary orientation.

IV. Institutional Doctoral Fellowships at Council's Research Institutes

Institute	Discipline
1. Sardar Patel Institute of Economic & Social Research, Thaltej Road, Ahmedabad-380054.	Rural, Regional, Industrial and Monetary Economics, Econometrics.
2. G.B. Pant Social Science Institute, 80, Tagore Town, Allahabad-211002.	Political Science, Geography.
3. Centre for Studies in Social Sciences, 10, Lake Terrace, Calcutta-700029.	History, Geography, Economics, Econometrics, Political Science, Sociology, Social Anthropology.
4. Institute of Economic Growth, University Enclave, Delhi-110007.	Economics, Sociology.
5. Institute of Public Enterprises, University Campus, Hyderabad-500007.	Commerce, Economics, Administration, Financial and Business Management.
6. Giri Institute of Development Studies, Sector 'O' Aliganj Housing Scheme, Lucknow-226020.	Economics, Political Science, Sociology

7.	**Madras Institute of Development Studies, 79, Second Main Road, Gandhinagar, Adyar, Madras-600020.**	**Economics, Political Economy, Sociology**
8.	**A.N. Sinha Institute of Social Studies, Patna, 800001.**	**Economics, Social Psychology, Sociology**
9.	**Indian Institute of Education, 128/2, J.P. Naik Road, Kothrud, Pune-411029.**	**Education (Inter-disciplinary)**
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11.	**Centre for Development Studies, Aukulam Road, Ulloor, Trivandrum-695011.**	**Economics**

V. ICSSR Foundation Day Doctoral Fellowship

Eligibility : **(For Scheme I, II and IV)** Master's degree with minimum 55% marks in social sciences. **(for Scheme III and V) :** Master's degree with first class in social sciences. For Scheme I, II and III : Applicants must be registered for Ph.D. (not for M. Phil) or should be able to complete the registration formalities within six months of the award. **For Scheme III :** Students from North-East region working on priority areas **only** may apply. Institutional fellowship awardees will be required to be registered for Ph.D. with a faculty member of the institute as their guide. **The scholar already registered elsewhere need not apply.** Awardees will have to stay at the institute during the entire period of fellowship. For Institute of Economic Growth, Delhi : First Class or high second class M.A. in Economics/Sociology with M. Phil. **For Scheme V :** Must be registered for Ph.D.

Maximum Age Limit : For Scheme I, III, IV and V : below 30 years and for Scheme II : below 35 years (as on October 1, 1987);

Value of Fellowship : (For all schemes) : Rs. 1,000 p.m. for first two years and subsequently Rs. 1200 p.m. For teachers in affiliated colleges and research staff in research institutes full salary will be protected. Contingency grant of Rs. 3,000 per annum.

Duration : (For Scheme I, II and IV) : For a maximum period of four years ; and for Scheme III and V : for three years.

Application forms for Scheme I, II, III and V may be obtained from the undersigned by enclosing a self-addressed and stamped (Rs. 1.50) envelope (23cm x 10cm). **Requests unaccompanied by a self-addressed and stamped envelope or received after the closing date will not be entertained.** Completed applications will be received in the Council latest by **15th September, 1987.**

Application forms for Scheme IV may be obtained **directly** from the Research Institute concerned and on completion submitted to them. **Requests for Application forms for institutional fellowships or completed applications if received in the Council will not be considered.**

Prem Singh
DEPUTY DIRECTOR

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157

University News

MONDAY, AUGUST 24, 1987 Rs. 1.50

D 52

Adult Education and National Integration

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Intellectual Slavery

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Underground Mining Vehicle

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ICMR Awards

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ADMISSION NOTICE

In order to prepare professional leaders in Physical Education and Sports Sciences, the College/Institute of Physical Education sponsored by Delhi Administration, invites applications for admission to the 3-Year B.Sc. (Phy. Education, Health Edn. and Sports) Course by 31st August, 1987. The application forms would be available at Chhatrasal Stadium, Model Town, Delhi, from August 25-31, 1987.

The objective of the course is to prepare professional leaders for better human living and performance in sports activities through scientific methods and skills of man management, qualifying them to secure jobs after graduation or pursue further studies for Master's Degree, M.Phil., Ph.D. etc., and seek employment in schools/colleges/ Universities/Sports Councils, Sports Authorities and other Sports Managements of Industries, Recreation/Health Clubs, in Hotels and other Govt./Semi-Govt./establishments etc.

ELIGIBILITY :

The minimum eligibility for admission will be Senior Secondary School Certificate :

OR

Senior Cambridge

OR

Indian School Certificate or 12-Years' Schooling

OR

Intermediate Certificate

OR

Certificate in Physical Education of at least one-year duration from any recognised institution with a total of 12-year of Schooling

OR

Any other recognised equivalent qualification.

Preference will be given to sports performance at various levels and selection will depend on total merit (Academic/Sports) on the whole.

Candidates should be between the age of 17-20 years. However, age may be relaxed upto 22 years in the case of National/International sportsmen and women.

Outstanding sportsmen/women admitted for this course are likely to be considered for subsidies for boarding and lodging and playing kits etc.

Candidates who have already joined other courses in the University of Delhi or any other institution are also eligible to apply. The details about the programme admission forms etc., can be obtained from the College office between 10.30 a.m. and 12.30 p.m. on every working day from 25th August, 1987 to 31st August, 1987.

The selection of candidates will be based on physical fitness and ability, professional aptitude and other personality traits, related to development of human personality, ability to communicate and take up leadership positions for human behaviour and development.

Dr. J. S. Naruka
OFFICER-ON-SPECIAL DUTY
PRINCIPAL

UNIVERSITY NEWS

VOL. XXV AUGUST 24
No. 34 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor:
SUTINDER SINGH

INTELLECTUAL SLAVERY

B. M. Sankhdher*

When Shastri Bhawan construction work started, I saw young, 35 years old, Bhola from Bikaner, engaged in digging the foundations, in extreme summer, sweating, but with utmost devotion, dedication and a high hope. He had a smile on his face. His wife was also engaged in the same work and his child was playing with stones on the footpath. After years of hard work and waiting the Shastri Bhawan was ready for use. It was an excellent structure—a unique memorial to LAL BAHADUR SHASTRI. A tablet was put on the main entrance of the Shastri Bhawan, mentioning the name of Morarji Desai, as the inaugurator-founder of the Bhawan. When I saw the tablet a thought struck my mind : Who is the Real Founder of the Shastri Bhawan ? Is it Bhola, who worked day and night, with his co-workers and laid the foundations or Morarji Desai, perhaps the Deputy Prime Minister of India at that time.

Need to Honour

There cannot be any two opinions about the need to honour our national leaders with highest national projects and endeavours, in a suitable manner. They are the people, whose contribution is beyond description, and who provide, in their own manner, a shape to the destiny of the people. But it is certainly possible to find a way through which the poor, neglected, unknown construction-worker from Bikaner, Bhola, could also be honoured. How could he be recognized ? The solution is absolutely simple : Put yet another small tablet on the main entrance of the Shastri Bhawan, mentioning the names of all those 2000 construction workers—also indicating the names of their villages—who built the magnificent Shastri Bhawan.

Intellectual Satellites

Work without honour is slavery.

A similar type of slavery or lack of recognition or honour is continuing in India, right from the days of the East India Co.—may be earlier. Of late, I was scanning through the *Collected Works of Mahatma Gandhi* and *Selected Works of Jawahar Lal Nehru*, at Teenmurti, in connection with my studies on Indian education. These are an excellent source of historical investigation and a mine of invaluable information. These have been produced by dozens of scholars engaged for a long time, in the task of collecting the material and giving it a final shape. These scholars deserve our utmost gratitude.

Selected works of Jawahar Lal Nehru series has been produced by the Nehru Memorial Fund—where about two dozen scholars, known to me, are engaged in the uphill task of making the writings and speeches of Jawaharlal Nehru available to the common man, through these excellent publications. Some of these volumes carry a foreword by Mrs. Indira Gandhi. The General Editor of the series is Professor S. Gopal. On the top of many volumes, there is a mention of some distinguished Nehru-scholars : M. Chalapathi Rao, H.Y. Sharda Prasad and B.R. Nanda, etc. who have served as consultants or as the members of the Advisory Board. While scanning through these volumes and also the *Collected Works of Mahatma Gandhi*, I was shocked to see that those dozens of scholars—devoted, dedicated, hard working, with a lot of experience in the field, and who work day and night at different record repositories, libraries and other research institutions, and who are the real authors of these volumes—do not find a mention anywhere on the volumes. These scholars, who prepare the editorial notes, biographical sketches, summaries of documents, glossaries, indexes, bibliographies, and who move from National Archives, New Delhi to National Library, Calcutta, from Theosophical Society, Adyar to Aurobindo Ashram, Pondicherry, for identifying places, persons and dates, mentioned in the documents, who search for new materials and consult voluminous archives and other reference works, such as encyclopaedias, dictionaries, biographical dictionaries, year books, guides to periodical literature, newspapers, journals, etc. are not recognized or mentioned with due honour on these volumes. Jawaharlal Nehru, who was a real democrat and a liberal, could not have tolerated this injustice. Mahatma Gandhi, who wanted everyone to be involved in the task of nation building would not have liked the idea that those persons, who are the real authors of his *Collected Works* should be ignored or not honoured. He honoured all his lieutenants : Dr. Zakir Husain, Kakasaheb Kalelkar, Sriman Narayan, Ghanshyamdas Birla, Khan Abdul Ghaffar Khan and Jawaharlal Nehru.

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Why the names of those persons, who have produced the *Selected Works of Jawaharlal Nehru* and *Collected Works of Mahatma Gandhi* have not been mentioned is not known. What would the nation lose in recognizing them and giving them what is their due ? Why these scholars should remain always behind the walls ? Why can they not be helped in leaving the Obscurity Street and coming to limelight?

Why those scholars, who are the real authors, should act as mere intellectual satellites or slaves ? There cannot be any doubt that VIPs or the most eminent individuals of the country must remain associated with these volumes, but why the real authors could also not be recognized, honoured and saved from discrimination ? There must definitely be a board of consultants, advisors, whose names should embelish such volumes, but the institutions, which are engaged in producing these volumes would n go down in the estimation of the world if the r authors of these volumes are also mentioned. The is no doubt that the authors, who really produ these volumes are paid their salaries and allowance but if we do not recognize their intellectual compe ence and attainments, we would be committing gross national sin, a crime against humanity. W would be perpetrating a worse kind of intellectu tyranny or dictatorship in the realm of ideas.

What Happens in the Government of India ?

Exactly a similar situation is prevailing in th Government of India : feudalism at its worst. Mo of the publications in Government remain eith anonymous or go in the names of the heads departments or Ministers. There is no mention those scholars or administrators, even of the highe IAS rank, who are the real authors of these publ cations. In the NATIONAL ARCHIVES OF INDIA for example, excellent research works, produced b highly qualified and trained archivists are publishec most of the time, in the names of those persons, wh have hardly anything to do with them, but who agre without sufficient reason—through some uniqu machination or subtle strategem—to put their name on them, after having gone through them at the fina stage of publication. This is the fate of the Nationa Archives of India's *Fort William—India House Corres pondence*, *Persian Akhbarats*, etc.

This is a worse kind of bureaucratisation, tyrann or colonialism. Eminent individuals or nationa leaders can be honoured and must be honoured bu not at the cost of Bhola from Bikaner, not at the cos of hard working, honest, efficient archivists, who ar engaged day in and day out, in the preparation o highly scholarly works for the Government.

This practice cannot be allowed to continue. Thi is a kind of exploitation and the earlier it stops th better.

British Colonialism

During the British rule, when Sir William Jones, H.T. Colebrooke, William Carey, J. Marshman, and H.H. Wilson produced their immortal works on India, they forgot to mention, in most of the cases, the names of those great Indian scholars—the authorities on Sanskrit, Hindi, Persian and Arabic Literatures, who helped them in producing their works on Vedas, Mahabharat, Ramayan and Kalidas and who

(Continued on page 8)

Adult Education and National Integration

5 SEP 1987
C. F. T. R. I., MYSORE

G. B. K. Hooja*

"I am a little weary of conferences and a little loubtful of the extent of their utility. But even hough my enthusiasm for conferences may have vaned, my attraction to a conference of youth like his remains, for it is so unlike the gatherings of older 'olk. Many of you also, it may be, when you grow lder, may unhappily fall into the ancient ruts and orget the spirit of adventure and dare-devilry which was yours when you were young and full of enthusiasm, and I, with years creeping on me, have come to you to be a sharer in your abounding hope and courage and to take back with me...some measure of your faith and enthusiasm. I have come because the call of youth is an imperative one and few can say no to it. I, therefore, appreciated the honour extended to me and gratefully accepted it.

"Why do people meet in conferences ? Why you met here today ? Not surely just to deliver speeches and listen to them or as a mere diversion from your work ... You have met here, I take it, because you are not content with things as they are and seek to change them. Because you do not believe that all is for the best in this best of all possible worlds. Because you feel the weight on your young shoulders of the sorrow and misery of this country and this world of ours, and with the energy and fine temper of youth you believe that you have it in you to remove this load of sorrow or at least to lessen its weight. If this is the urge that has brought you here, then you have met well and out of your meetings and deliberations something of permanent good might emerge....

"What do we find in this world of ours today ? Utter misery is the lot of vast number of people and while a few live in luxury, the many lack even bread and clothing (and shelter and alphabets) and have no opportunity for development. Wars and conflicts ravage the world and the energy that should go to build up a better order of society is spent largely in mutual competition and destruction.... "Look deep down where the millions toil in the field and factory and look across the frontiers of India to where others like you are facing problems similar to yours. Be national, the sons and daughters of your ancient motherland, working for her liberation (from ignorance, poverty and all that weakens her, so that nobody dare cast an evil eye on her) and be international members of the Republic of Youth, which knows no boundaries of frontiers or nationalities and works for the liberation of the world from all thraldom and injustice".

These words of Jawaharlal Nehru which were spoken by him while addressing a conference of young men and women of Bombay are relevant even today. If at all, more so. Not only do they indicate the danger of gap between speech and action, but they also indicate the vast gap which exists between promise and actuality, the promise made by our elders and the actuality achieved by us on the ground so far, in honouring that pledge.

Talking of the problem of national integration with which the country is faced today and the role of adult education, let me say at the outset that the strength of a nation lies in the men and women who constitute its citizenry. Just as in the case of a family, the sum total of the strength of the constituent members of the family is the measure of the strength of the family ; even so in the case of a nation, its strength lies in the united strength of its citizens. It follows, therefore, that it will be an act of self-delusion on the part of an elitist minority to consider its job done, if it has managed to arrive at or maintain itself in the higher brackets of society. It must give in its own self-interest, necessary attention to the less fortunate brethren and do its best to elevate them, so that all play their due role in building up the national strength. As long as there remains a weak segment in society, it shall be a drag on the whole. It was the realization of this reality that made the ancient Rishis of India pray that the nation be bestowed with learned scholars, brave warriors, skilful businessmen and entrepreneurs, mothers of valiant sons, milk-yielding cows, strong oxen, swift horses, good rains, bumper, harvests, fruit-laden trees, and plentiful fodder, and all that goes to make a nation strong and happy.

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The Rig-Veda, in the Sanghatan Sookta, enjoined upon men to move together, to speak with one voice, to have united minds, to think constructively and harmoniously, to live as one family, without any consideration of high and low. It is the pursuit of these time-tested objectives and values which is called for once again at this crucial juncture of our national history. It is not out of charity that the better-placed classes should advance the interests of the deprived masses, but out of sheer necessity and self-interest. It was the neglect of this paramount duty towards the other folk, which was primarily responsible for the humiliations suffered by the guardians of the nation in the past. As a result of the absence of the family spirit, the common man looked on unconcernedly, while the Rajas and the Nawabs lost their battles. In contrast, the Battle of Stalingrad was fought and won by the common folk who resolutely defended their hearths and homes with the last drop of there blood for over 40 months until the invaders were finally repulsed.

Again, it was the recognition of this stark reality that made the founding fathers of our Republic seek the enthronement of Justice, Liberty, Equality and Fraternity in our polity. They guaranteed all citizens equality before Law, full and equal opportunity for self-development and growth, freedom of speech and association, subject, of course, to the exigencies of national security. They laid down the Directive Principles of State Policy too, with this aim in view. While our young Democracy has successfully weathered many a political storm and external threats over the last 40 years, the same cannot be said with equal complacence about the manner in which the directive principles of state policy have been followed. There have occurred noticeable lapses and distortions in the fields of education, socio-economic reorganisation and democratic values which tend to generate simmering discontent and continuing tensions.

II

According to available statistics, the percentage of literacy in 1981 stood at 36.27. In 1951, the number of illiterate persons in India was 30 crores. In 1981, the figure had risen to 43.7 crores. It is estimated that women comprise 57% of the illiterate population and the situation among the scheduled castes and tribes is particularly bad. Inspite of the fact that during the last 10 years, literacy programmes received special attention, the solution is nowhere in sight. Notwithstanding the attempt made to establish administrative and technical resource centres and to involve voluntary agencies in larg numbers, the situation is characterised by low level of literacy among persons recorded as literates, wide spread disuse of literacy skills, often resulting i relapse into illiteracy and scanty opportunities f continuing education and access to informatio Science and technology which might as well tran form the landscape have not yet come into full pla so far as literacy programmes, functional or othe wise, are concerned, and the youth, masses, worke and industrialists have remained almost uninvolve This is the measure of the challenge before us.

It is recognised that adult education can serve a means to reduce social, economic and sex dispar ties. However, if past experience is any guide, pr grammes of literacy can become meaningful only they are accompanied by a package comprisin practical information on matters of health, far practices, acquisition and improvement of skill relating to employment, marketing facilities an general awareness regarding national goals, develop ment programmes and social liberation. Above al they must be geared to the creation of an all-Indi outlook to counter the menace of the separati mentality, which is eating into the vitals of th nation and may well be termed as "sonosoilitis" (son of-the-soilitis).

III

The malady of sonosoilitis is basicall rooted in the economic situation, and if an overa view of the national economy is taken the economi situation continues to be grim notwithstandin heavy investments in high dams and hydroelectri projects, huge steel and cement plants, roads, rai ways and airways, expansion of radio and TV net work, nuclear research, war industries, etc. True there is in evidence an upper layer of affluence in th Indian socio-economic order, but beneath it lies huge mass of suffering, deprived, under-privilege humanity. Let the visible wealth and prosperity o the few not blind us to the grim reality and th simmering discontent which goes with it.

According to L.C. Jain, who has made a life-lon study of poverty-alleviation programmes, the employ ment exchanges are bursting today with 298 lakh per sons seeking jobs compared with 8 lakhs in 1956; an that 90 lakh persons would still be unemployed at th end of the 7th Plan. Further, employment in the organised manufacturing sector is highly concentrat ed, about 60%, in the 4 States of West Bengal, Tami du, Maharashtra and Gujarat, who form less than /o of India's total population. It may be noted e that employment is only means for acquiring rchasing power, and since the purchasing power of rupee has suffered a drastic erosion in the last years, the brunt of the blow has fallen on the unornised sector of the labour who constitute over 70% the work force in the manufacturing industries. pointed out by him, the consumer price index for od in this period rose by 400 points for industrial orkers. In the absence of dearness allowance and her benefits, devastation of their real income can ell be imagined. Then there is the relatively more rious problem of under-employment. "The disrity between the bottom and the top households in nsumption of cereals as a whole is 4.5 times, hile for food as a whole, it is more than 10 times. is at the grossest with 240 times disparity in conmption of milk and milk products. In the nonod items, the disparity between these consumer penditure classes is over 40 times. In footwear, is 392 times—the poor spend 24 paise per head per ear on footwear compared with Rs. 94 per year by e better-offs", notes L.C. Jain. In view of such aping disparity, widespread unemployment, conceal- d or otherwise, erosion of purchasing power, lack of ducational and health facilities, minimal intake of roteins and milk, it is a tall order to expect the vast ass of disadvantaged people to render unalloyed oyalty to the ideal of national and social cohesion. This is a situation which the upper classes have to ecognise in the interest of national integration and, f course, their own survival.

IV

Now, a look at the politico-administrative strucure. Having been familiar with the British system, he framers of the Indian Constitution decided to ncorporate its salient features in our system of goverance. As a gesture of respect to Gandhiji, however, hey agreed to add Article 40 in the Directive Princibles of State Policy stating that "the State shall ake steps to organise Village Panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of selfgovernment". Now, it is well-known that according to his last will and testament, Gandhiji wished the Congress to dissolve itself and convert into a Lok Sevak Sangh, after it had accomplished its historic task of attaining Swarajya. But the **sutradhaars** of the Congress thought otherwise, and preferred to strike their own path. Gandhiji stood for austerity in life-style and in governance. He stood for village and **khaadi** industries, and above all, he recommended village self-government, based on self-reliance for local, vital needs, and inter dependence on neighbourhood only when necessary. He conceived each village to be a self-governing republic. "In this structure composed of innumerable villages, there will be ever-widening, never ascending circles. Life will not be a pyramid, with the apex sustained by the bottom. But it will be an oceanic circle", as he graphically put it. It is interesting to note that almost a similar concentric system of governance was recommended by Swami Dayananda over a hundred years ago on the authority of the Manusmriti. "Let there be a government office in the midst of 2, 3, 5 and a 100 villages, wherein should be kept the required number of officials to carry on administrative business. Let there be an official at the head of one village, a second one over 10 such villages, a third one over 20, a fourth one over 100 villages and a fifth one over a 1,000 such villages...

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Over every 10,000 villages let there be 2 presiding officials, one of whom should preside over the Assembly, whilst the other should tour all over the territory and diligently inspect the work and conduct of all the magistrates and other officials...Let the king appoint such men guardians of his people as are virtuous, well-experienced, learned and of good lineage...Let the king punish properly the magistrate who accepts bribe either from the plaintiff or the defendant in a case, and, therefore, gives an unjust decision. Let the king confiscate all his possessions, and banish him to a place from which he can never return'', said Dayananda.

Now that a national debate is going on between the advocates of the Prime Ministerial and Presidential forms of Government, here is the third model to ponder over. Basically, what the people want is good government, and since a succession of good rulers cannot be ensured in the hereditary, dynastic system, elective democracy offers the next best alternative. And this is what our founding fathers adopted. Carrying the concept of Democracy to its logical (district and village) level, Nehru, a thorough-bred democrat, by persuation and conviction to introduce the lamp of Panchayati Raj at the historic convetion held at Nagpur (Rajasthan) in 1959, but he did not live long enough to give it the necessary sustenance, with the result that the lamp burnt dim and barely survived his death. It suffered from two serious lacks. First, elections were not held periodically which prevented the growth of accountability and induction of fresh blood; second, adequate financial resources were not made available to P.R. institutions So they became anaemic. In course of time, Asoka Mehta Committee was appointed to suggest ways and means of resuscitating the process of democratic decentralisation; and it did come forth with a model bill, but the Government of the day developed cold feet, and the report was consigned to the limbo of oblivion.

It is heartening to note that the Hegde Government in Karnataka has now made bold to decentralise administration by granting powers to grassroot institutions at the municipal and village levels. It has gone one step further. It has reserved 20% of seats on the civic bodies and 25% seats in P.R. institutions exclusively for women.

In an attempt to render unto the People what belongs to the People, elections to 175 Municipalities, 4 corporations, 10 Zilla Parishads and 2536 Mandal Panchayats have been ordered to be held. Karnataka Government conceives the Zilla Parishads and t Mandal Panchayats to be responsible to the Peop under their respective jurisdictions. While each the Zilla Parishads will have one member for 35,0 population on an average, in the case of a Mand Panchayat, there will be one member for 100 famili in a village.

As for funds, a substantial sum of Rs. 900 cror has been transferred to these bodies for the first ye as against a paltry sum of Rs. 4 crores allotted 18,000 Village Panchayats and 175 Taluka/Boar during the last year. The tremendous amount energy, which these reforms should release, for dev lopment in the State, can well be imagined.

It is now realised that adult education an national integration should be developed as ma movements. Here then is a model to be followed b the rest of the country.

The Prime Minister has issued **firmans** to the sta satraps to hold elections to P.R. institutions as soon possible. What one fails to understand is why no ste are being taken to suitably amend the Constitution s as to introduce Panchayati Raj as the third tier Government at the grassroot level in accordance wit the recommendations of the Asoka Mehta Committe Report and thus to redeem the pledge of Gandhi and Nehru. At one stroke, this should generate mass movement for the development of village loyalt and eradication of illiteracy, which may hopefull culminate into a surge of national consciousness an social solidarity.

V

Having pleaded for the introduction of Panchaya Raj as the sine qua non for the development of Adul Education as a mass movement, I may now refer other strategies for the effective implementation the programme.

Way back in the 30's, following Frank Laubach we considered the formula, "each one, teach one", a the panacea for this problem. However, nothin much came out of it all these years. Speakng on th occasion of the presentation of Nehru Literacy Awar (1986) to Madhuri Shah the then President of India Giani Zail Singh again made a reference to this strat gy and suggested that it should be made compulsor for every Government employee to make at least on person literate in one year. One might add tha pensioners, civil and military, might also b drafted for this campaign, but before that a batter incentives and disincentives shall have to be signed to persuade them to be yoked in this task, d this would call for a debate and concensus so at the proposal is readily accepted by all concern- and faithfully implemented.

From this, the next step may be to involve High hool/College students and teachers in this pro- amme, and the pros and cons of this proposal may so be duly examined. Agricultural universities ive brought about the Green Revolution through ieir extension work amongst the illiterate peasantry f India. Why should the traditional universities not ke up the challenge of wiping out illiteracy from ie fair face of our dear motherland ? Why cannot the niversities, colleges and schools accept the role of ight Houses in their respective territories and em- ark upon an extensive programme of spreading teracy and enlightenment all around ? Considering he gravity of the situation, it is time they were alled upon to gear themselves to the task. Madhuri hah, as the Chairperson of UGC, sought to esta- lish Adult and Continuing Education Departments n the university system, but they need to be suffused vith the spirit and zeal of a mission, so as to under- ake area specific and time-bound programmes. At he same time, it may be necessary to set up a nonitoring and evaluation agency to watch progress and suggest remedial measures, in accordance with the scientific principles of management by objectives.

While on the subject of school education, may one propose the establishment of neighbourhood schools as recommended by the Kothari Commission over 20 years ago ? This schould go a long way in developing national consciousness arising out of a sense of local loyalty, by transcending all divisive tendencies based on caste, creed, class and community. It is not a novel proposal, but since it has had no takers in the last 20 years, a reconsideration of this proposal too may be useful.

Role of voluntary agencies in this campaign cannot be over-emphasised. Voluntary agencies may include social, religious, educational as well as poli- cal bodies. However, they too would need due monitoring and performance audit. Could this be done under the umbrella of the Indian Adult Education Association ?

While on the subject of voluntary agencies, may one refer to the pioneering role they played in spreading the message of universal and cultural education according to their own light during the last 100 years ? However, since the society stands permeated with bourgeoise values, these institutions have become prisoners of their own social ethos and have failed to grasp the importance of training the hands and imparting vocational education to the wards under their charge. As such education has remained primarily a path to white collar jobs and has failed to attract millions of children of the weaker sections of society who see no benefit in undergoing a scholastic course. As a result, we have the phenomenon of drop-outs. One wonders if voluntary agencies can now turn the wheel and come forward to pioneer the introduction of **vocational education for all** through High School education as envisaged by Gandhiji in the scheme of Basic Education and thus make education meaningful for the young hopefuls.

Yet another programme which the Adult Education should adopt is Environmental Conservation and Development of Social Forestry. It should be realised that uhabated deforestation over the last century has created a critical environmental imbalance in the country and we are now threatened with an impending pall of pollution and shortage not only of timber and firewood but also of pure water and fresh air. The services of the Ministry of Non-Conventional Sources of Energy should be requisitioned to popularise the use of solar, wind and biogas power for domestic purposes so that at least the firewood demands on forests are appreciably reduced.

Involvement of youth in this programme should develop a sense of kinship with flora and fauna and, therefore, with the motherland which as the national bard sang is "*Sujalaa, suphalaa, malayaja shitalaa, shasya shyaamala*".

Indian Army is known to be the largest single employer, which converts raw village tyros into literate and self confident citizens within the span of their service. Same could be enjoined upon Indian Industry, with hopeful results. It is understood Trade Unions do undertake some such programmes, but the programme of Workers' Education has yet to take off in the true sense of the word.

Here, I may be permitted to the experiment conducted by Ram Singh, SDO-cum-BDO of Doongarpur (Rajasthan), as he then was, in the early days of the Community Development Programme. He had a large work force of Bhil men and women employed on tank digging and road building operations going on in his jurisdiction. He supplied arm bands to each worker, bearing the initial alphabet of his or her name. In no time, the workers picked up the alphabets and were seen practising them on the sand with their own fingers. Later, this system was sought to be duplicated at Kangri Village (U.P.) by the Adult Education personnel of the Gurukula Vishwavidyalaya by printing names of inmates on their huts and houses. While the target groups acquired acquaintance with letters by this method, the question of continuing education remained to be solved in the absence of suitable reading material.

If Indian Industry with its huge provision under the head "advertisement" can see its way to ally itself with this programme, the benefit shall be mutual in so far as it shall establish a 2-way and life-long traffic.

Last but not the least, womens' education shall have to be given top priority. *Maataa nirmaataa bhavati*, is an old Sanskrit saying. Mother is the maker. In ancient days, it was enjoined on the kings to ensure that all school-going children of either sex are sent to the Gurukulas on pain of punishment, but along the road of History this salutary Law was derailed, with serious consequences. How to resuscitate it is the star question. It may, therefore, be worthwhile to bring together women's uplift organisations and share experiences.

And finally a word on the role of the media—electronic, print, traditional and cultural. These are powerful agents of change and all the care in the world is required to ensure that they transmit healthy, man-making, nation-building programmes. All the time, they need more and more of software to be fed into them, and this, in turn, imposes the responsibility to provide the same in terms of the idiom appreciated by the target groups, the progressive, forward looking educationists. Accordingly there is need of continuous research and experimentation in this field by creative artists and bold innovators. ☐

Intellectual Slavery

(*Continued from page 2*)

also taught them these languages. W.W. Hunter forgot to mention hundreds of those Indian scholars, who helped the British Government in the production of the *Indian Gazetteers* series. The British, as a whole, wanted to treat the Indians as hewers of wood and drawers of water, as a part of their racist, colonial policy.

Even today, some universities, research institutions and other cultural organizations are following a policy of intellectual servitude, for example, the twenty nine volumes on Aurobindo Ghose, published recently from Pondicherry, by Aurobindo Birth Centenary Committee, with Dr. Karan Singh as Chief Editor. These volumes do mention a few scholars, but not the entire team of those, who must have helped the Centenary Committee in its stupendous task. Some institutions are perpetrating slavery in the name of academic excellence, quality, highest research, expert-consultancy and honour to VIPs. This is all unjust, demoralising and frustrating to the real authors. It compels the self-respecting scholars to commit violence or to climb up the top of their organizations, in an attempt at self-destruction, and jump, leaving a note for the posterity : "No one may please be held responsible for my death."

Dr. K.M. Munshi, the founder of the Bharatiya Vidya Bhawan could have easily put his name, as author, on the numerous publications of the Bharatiya Vidya Bhawan, but he did not do so, and as a result the History and Culture of the Indian People series, produced by Dr. R.C. Majumdar, as chief editor, mentions dozens of historians as contributors or co-authors, including Dr. H.L. Singh, Dr. A.K. Majumdar, Dr. P. Saran, Dr. K.S. Lal, Dr. Amlesh Tripathi, Dr. K.K. Datta, Dr. S.K. Banerji and Dr. T. Raychaudhary. In *History of the Freedom Struggle in UP* and *Sardar Patel Correspondence* volumes too all the principal contributors have been mentioned.

It is high time when Bhola is recognized. He must be rescued from the limbo of oblivion.

As a practical solution to this human problem, I suggest that : (i) the names of all the real authors be mentioned on their productions; (ii) they should be honoured and provided some opportunities or incentives for independent research; (iii) they should be provided some honorarium out of the huge royalties earned by the institutions on their works; and (iv) finally, they should never be treated as dead enemy-soldiers, by any one, for climbing up the ladder of success or eminence. ☐

Uphold Thy Dignity

Hon'ble Shri Pendekanti Venkatasubbaiah, Governor of Bihar delivered the Convocation Address at the Convocation of the Bihar University held after nearly two decades. Mr. Venkatasubbaiah referred to the reforms for improvement at different levels of the universities' functioning initiated by him in his capacity as the Chancellor of Universities in Bihar and exhorted the teaching community to uphold its professional ethics, integrity, maintain and enhance the dignity of the members and to contain professional misconduct. He said, "A teacher not teaching is no less a delinquent than a student cheating at examinations. It is unfair both to the students and the teaching profession". Excerpts :

Convocation

Bihar has had glorious traditions of learning, having had the great centres of higher learning such as the **Nalanda** and **Vikramshila** universities which attracted scholars from all over the world. Their students earned renown wherever they went for their erudition, scholarship and commitment to their ideals.

Even in the modern days the universities in Bihar have achieved very high academic distinctions. Patna University from which Bihar University was carved out after the former was converted into residential-cum-teaching university has been known for its academic achievement. The Bihar University, which was established in 1952 and covered whole of Bihar except Patna urban area has been the mother university for a number of universities. Besides the two Agricultural Universities and the Kameshwar Singh Sanskrit University, Darbhanga, five other universities have been carved out of the Bihar University.

There has been considerable progress in the establishment of centres of higher learning in Bihar. The Birla Institute of Technology at Mesra, as you all know, has become a deemed university. An Open University has been established at Nalanda. Bihar is the second State in the country to establish an open university to provide distance education for those who cannot be provided or are unable to have formal education in traditional universities. This is a very significant development for a state like Bihar where because of low income levels and enormous pressure of population many cannot afford to have higher education at traditional Universities.

A university, however, is judged not so much by the number of graduates or post-graduates that it turns out, but by the quality of academic achievement of its products as also of its teachers. The reputation of a university is established by the excellence which its teachers, research workers and students achieve rather than by its growth in terms of buildings or the physical dimensions of its campus. The members of the university have therefore the responsibility to work for the inculcation of excellence in their pupils and elevate the credibility of the university, if we are not to betray the legacy of the glorious traditions set by Nalanda and Vikramshila.

Our country adopted a policy of planned development nearly 35 years ago under the leadership of its first Prime Minister, Jawaharlal Nehru. Nehru was highly conscious of the ancient traditions of the civilization of our land and its multi-dimensional yet composite culture. He always prided in the diversity of languages, culture and traditions of the country. Yet he was keenly aware of the need for bringing in modern science and technology into the country in order that it may be attuned with the progress of the rest of the world and with the need for developing awareness of a common Indian identity. In his Azad Memorial Lecture of 1959, he posed the question ; can we combine progress in science and technology in a country and a people rooted in the remote past with the progress of the mind and spirit also that the present age demands ?

Over the years tremendous progress has been made in all branches of knowledge particularly in the field of science and technology in the more advanced countries. We have not only to catch up with the rest of the world but also to remain in the forefront of scientific achievements. This is not a difficult task considering the talent available in our country, provided the requisite effort, dedication and discipline are not lacking on the part of all those involved in the educational system, particularly the students and research scholars. In this task, it is the teachers who have to set an example to students, and it is the graduate students who ought to inspire the undergraduate.

We are all aware of the influence of the socio-political milieu in which we function. Some of these influences are patently undesirable such as casteism, communalism and regionalism. It is incumbent on us, both the educated and those aspiring to be educated, the teacher and the student, to fight these evils. If we, who are the more fortunate and the enlightened section of the society do not take the lead in this battle, who can save our society from lapsing into the darkness of abysmal ignorance and poverty ? Student power and teacher power have to be combined effectively to fight these evils.

Following the lead taken by Jawaharlal Nehru and his illustrious daughter Smt. Indira Gandhi, India has emerged as one of the foremost leaders of the third World. The non-aligned movement, which was launched out of a desire to bring together the newly emerging countries of the world as a cohesive group, independent of the power blocs in the world, has become a very important force in the world today, and India has played, very naturally, a leading role in the same. However, because of the growing importance of our country, powers that are feeling jealous, are threatening the stability of the country. The forces of destabilisation are taking advantage of the various weaknesses in our socio-political system to which I referred earlier for dividing and confusing our people. Our Constitution lays stress on the secular socialist and democratic character of our society. It is the responsibility of every university to see to it that its products play an effective role in the realisation of the goals of a socialist, secular, and democratic society as envisaged in the Constitution. The contribution of students and teachers towards promoting national integration has to become more pronounced and effective.

Over the last two years as the Chancellor of the universities of Bihar, I have been trying to introduce in the universities some reforms for improvement at different levels of their functioning. The aim has been to improve the academic atmosphere in the universities. This cannot be achieved without the cooperation of the teachers and students and the university administrators. It is necessary that there is full commitment to academic goals on the part of every body, particularly the teachers. It distresses me to hear of teachers not playing their role expected of them. A teacher not teaching is no less a delinquent than a student cheating at examinations. It is unfair both to the students and the teaching profession. Teachers' Association must play a significant role in upholding professional ethics, integrity, maintaining and enhancing the dignity of their members, and in containing professional misonduct.

University education is the costliest of all the various levels of education. In a country of limited resources such as ours, we have necessarily to ensure that whatever is spent on education is productive and useful to society. The university system has been subjected to considerable criticism on the ground that the universities have only contributed to the growth in the number of educated unemployed. Therefore, there is a growing awareness of the need for revamping education with a more practical bias. Education cannot remain unrelated to the needs of society. It has to serve as an instrument of social change. Therefore, the growth of education has to be linked with the type of economic development that is being planned.

Education is sought for, both as an end in itself and also as a means to an end. Education produces a better man, a more cultured person, who can lead a co-ordinated life and is able to demand, obtain and enjoy the goods and services available in a modern civilized society. At the same time, education imparts skilled training which is necessary for manning the productive processes in a society. If growth in education fails to keep itself linked with the needs of the productive processes, conflict and social unrest are bound to ensue. Therefore, I would like to say to the teachers your norms and methods of work, the syllabi that you frame, and your methods of teaching should all keep this in view. ☐

Shortly Releasing

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Question Bank Workshops

The Examination Reform Unit of the South Gujarat University organized four question bank workshops during July, 1987. The subjects covered for developing question banks were Mathematics, Gujarati, Electronics, Biology, nd Accountancy. In all 45 eachers from the affiliated colleges of the South Gujarat University and University Departments participated in these workshops. Experts were also invited from Faculty of Engineering and Technology, M. S. University, Baroda for the subjects of Computer Programming and Discrete Mathematics and Electronics.

The participants at the workshops expressed their satisfaction and said that this had helped them in understanding the concept of question bank, framing of various types of questions and also provided clarification with regard to syllabus and its teaching. They observed that the question banks provided guidance to the students in learning and for examinations.

The question banks developed for various papers in the above mentioned subjects included all types of questions; Essay type, Short answer type and Objective type. Each question bank had on an average more than 250 questions.

New PG Course in Engineering

The Department of Education, Ministry of Human Resource Development, Government of India, has approved the introduction of a new post-graduate Engineering course in Soil Mechanics and Foundation Engineering eading to the Master of Engineering Degree. The course will be introduced in the Civil Engineering Department of the Assam Engineering College from February, 1988.

This would be the second post-graduate course in engineering in the entire NE region, the first one being on Watershed Management and Flood Control which is also conducted by the same college.

Helping Weaker Sections

The 13th annual Book Bank and the Scholarship Project launched by the Rajasthan Youth Association was recently inaugurated at Bangalore. Under the Project a full set of textbooks is given to the students of economically weaker sections studying in PUC, BA, B.Com. and B.Sc. courses. During the current year books would the supplied to 1700 students and scholarships granted to 30 students.

So far, more than 11,000 college students have availed of the services of the Book Bank since the launching of the project some 12 years ago.

Master's Degree in Finance & Control

The Department of Commerce of Delhi University has introduced a new 2-year professional course at the South Campus from this academic year. Known as Master of Finance and Control, the course has been designed to equip students with skills in financial planning, decision making and control.

Private Medical College

The Gujarat Government is reported to have permitted the Charotar Arogya Mandal to start a 100-seat medical College at Karmsad in Kaira District. This will be the first ever private medical college in the state which is expected to start functioning from the current academic session.

DRDO Promotes Computer Courses

The Defence Research and Development Organisation (DRDO) has selected seven universities in the country to start the computer course for providing manpower to the defence laboratories and research centres. They are Andhra, Allahabad, Mysore, Madurai, Cochin, Pune and Indore Universities.

To start with it will provide about Rs. 1.5 crores for the computer centre set up for the two-year M.Sc computer science course in Andhra University. The DRDO Director, Dr. C.R. Chakravarthy said the computer 'cyber 183' costing Rs. 60 to 70 lakhs would be supplied to the centre in about four months.

UP Varsities Statutes Amended

Statutes of Uttar Pradesh State Universities are reported to have been amended to regularise admissions, hold examinations on time and declare their results in time. According to the notification issued in this behalf, no admission will be made in any academic year after August 31. (However, an exception has been made for the current academic year and the universities have been permitted to complete admission by September 15, 1987). The Universities have been required to complete examinations by April 30 and declare the results by June 15.

Degree Course in Applied Electronics

A four-year degree course in Applied Electronics and Instrumentation Engineering is being introduced at the Regional Engineering College, Rourkela from the current academic session. To be started for the first time in the country, the course is expected to meet the acute manpower shortage in this field. The initial intake to the course would be 30.

The Union Ministry of Human Resource Development has sanctioned Rs. 56 lakhs and 12 teaching posts for the course.

Awards & Medals

ICMR Awards

The Indian Council of Medical Research (ICMR) have recently honoured 17 medical scientists for their outstanding contributions in the field of their specialities. As many as 11 of the 17 recipients to whom the awards were presented by Shri P. V. Narasimha Rao, Union Minister for Human Resource Development and Health in New Delhi were drawn from the university sector.

1. **The Dr. Y. S. Narayana Rao Oration Award :** Dr. Kunti Prakash, Professor and Head, Department of Microbiology, Lady Hardinge Medical College, New Delhi.

2. **The Amrut Mody Unichem Prize** : Dr. H. S. Wasir, Professor of Cardiology, All-India Institute of Medical Sciences (AIIMS) for his work on calcium blocking agents in cardiovascular therapeutics.

3. **The Dr. M. O. T. Iyengar Memorial Award :** Dr. Kunthala Jayaraman, Professor of Biotechnology, Anna University, Madras, for her work on development of environmentally safe and economically viable bio-insecticides.

4. **The BGRC Silver Jubilee Oration Award** : Dr. Manoramma Bhargawa, Associate Professor of Haematology, AIIMS, for immunohaematological studies in leukaemias and lymphomas.

5. **The Dr. Kamala Menon Medical Research Award :** Dr. S. S. Agarwal, Professor of Genetics, Sanjay Gandhi Post-graduate Institute of Medical Sciences, Lucknow, for his work on genetics and immunology.

6. **The Mrs. Swaran Kanta Dingley Oration Award :** Dr. M. Rajalakshmi, Assistant Professor, Department of Reproductive Biology, AIIMS, for her work on the physiology of epididymis and spermatozoa.

7. **The Dr. P. V. Cherian Memorial Award:** Dr. K. S. Chugh, Head, Department of Nephrology, Post-Graduate Institute of Medical Education and Research, Chandigarh, for his contributions to the study of renal lesions due to venomous snake bites.

8. **The Chaturvedi Ghanshyam Das Jaigopal Memorial Award :** Dr. V. K. Vinayak, Associate Professor, Department of Experimental Medicine of the Postgraduate Institute of Medical Education and Research, Chandigarh for clinical and experimental studies on the immunology of amoebic infection.

9. **The Shakuntala Amir Chand Prize :** (i) Dr. Upendra Kaul, Assistant Professor, Department of Cardiology, AIIMS, for his research on cardiac electro-physiology and pacing.

(ii) Dr. Kamlesh Kumar Pant, Lecturer, K.G. Medical College, Lucknow, for his research on the integration of cardiovascular functions at the level of the brain-stem and spinal cord.

10. Dr. Navjit Gill, Pool Officer, Department of Experimental Medicine of the Postgraduate Institute of Medical Education and Research, Chandigarh for the development of models of hepatic amoebiasis in guinepigs employing caecal and intramesenteric routes of infection.

Sports News

Degree Course in Physical Education

The Delhi University has introduced a 3-year B.Sc. degree Course in Physical Education, Health Education and Sports. A separate College of Physical Education has been set up to run the course from the current academic session. The objective of the course is to prepare competent professionals for better performance in sports activities through scientific methods and skills of human management. It is envisaged that those passing out from this professional college will be eligible for higher studies, leading to the Master's Degree, M. Phil, Ph.D., etc.

News from Agril. Varsities

Biogas Research Centre

A regional centre for research nd development in biogas has een set up at Himachal Pradesh Krishi Vishwavidyalaya at an estinated cost of Rs. 19 lakh. The nain objective of the centre is to ncrease the efficiency of biogas plants by improving the existing lesigns and bring down the cost of installation. It would also provide specialised training for the construction and maintenance of plants.

According to Dr. G.C. Negi, Vice-Chancellor of the Vishwavidyalaya, the research centre would cater to the needs of Punjab, Hāryana, Jammu and Kashmir and the north-eastern region of the country.

US Grant for Research

The U.S. Department of Agriculture is reported to have given grant to two Indian scientists to continue their work in fisheries research and veterinary science. The two grants, totalling Rs. 2,422,393 will fund the scientists' collaborative projects with American colleagues.

Dr. I. Karunasagar of the College of Fisheries at the University of Agricultural Sciences in Mangalore, Karnatakka, will use his Rs. 1,523,000 grant for research on paralytic shellfish poisons. Previous research on toxins in shellfish has been at high latitudes and low temparatures, but Dr. Karunasagar's work will expand the investigation to tropical waters. In order to fight this often-fatal malady, scientists need additional information on the rates of accumulation and loss of the paralytic toxins and the patterns of metabolism.

Dr. P. Richard Masillamony of Madras Veterinary College has received Rs. 899,393 for rerearch on bobble, a condition which forms defects in sheep skin, thereby reducing the economic value of the leather. Dr. Masillamony, assisted by Dr. R. A. Venkatesan, hopes to determine the causes of the disease and to develop methods of prevention and cure.

News from Abroad

Underground Mining Vehicle

Mechanical engineers at Queensland University, in Brisbane, have developed an underground mining vehicle which could make miners' jobs easier. One of the work horses of a modern underground mine is the load-haul-dump vehicle, or LHDV. This four-wheel-drive, front-end-loading vehicle loads and hauls ore.

According to Dr Peter Grigg, of the University's Mechanical Engineering Department. The machine had beed designed with improved productivity and better driver comfort and safety, able to operate in temperatures up to 50 degrees centigrade, featuring modular construction, simplified servicing and using well-tried commercially available components to ensure maximum reliability and ease of maintenance.

He said patent applications had been lodged in Australia and overseas for several of the vehicle's features, including a hydrostatic control system for infinitely variable gearing and a freely rotating driver's seat with in-built driving controls.

Ideology Education Research Centre

A new Ideological Education Research Centre set up with the specific task of finding more effective methods of shaping the political and ideological views of students in Chinese educational institutions was opened in Beijing recently. Mr Song Renqiong, Vice-Chairman the Central Advisory Commission of the Chinese Communist Party Central Committee, who inaugurated the Centre, observed that the paramount importance being attached to ideological education was not merely a reaction to the student demonstrations calling for greater freedom and democracy at the beginning of this year but the higher

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We Congratulate . . .

1. **Dr. P.C. Bora who has been appointed as Vice-Chancellor of the Assam Agricultural University, Jorhat,**
2. **Dr. B.N. Asthana who has been appointed as Vice-Chancellor of the Kanpur University, Kanpur.**

demands on and sacrifices that young people were expected to make in the construction for socialist modernization.

He added that the correct political orientation of education was that of adhering to the party line and the teachings of Marx, Lenin and Mao, and to the principles of reform and opening to the outside world.

Stressing the changed conditions under which young people were growing up and their influence on the ideological strengths and weaknesses of students, he said that ideological education would not consist of empty sermons and formalism, but would emphasize the practical results of such education—in other words, in preparing young people for action.

Education, the Vice-Chairman said, should not only publicize party policies but also answer the many ideological questions that young people encounter. Channels should be established to keep higher authorities "promptly and accurately informed of young peoples' opinions—of what they are thinking".

He said he believed that it was only under the direct control and care of the party that young people can constantly overcome their weaknesses and their vulnerability to competing ideological view points.

Tanzania to Strengthen Technical Education

Former Tanzanian President, Julius Nyerere, who advocated adult literacy, as a necessary prerequisite to national development, has urged his country to adopt technical education to rise from lethargy of under-development.

Mr. Nyerere, who is now the chairman of the ruling and the only political party in Tanzania, *Chama Cha Mapinduzi* (The revolutionary party) said that "less emphasis on technical education among developing nations hindered their progress.

Technical education, Mr Nyerere says, will assist developing countries to transfer technology from the industrialized nations and internalize it as their own.

He has asked the Soviet Union to transform Mbeya Technical College, in southern Tanzania, into a third university.

For more than two decades when he was President, Mr Nyerere championed an adult literacy campaign unequalled elsewhere in Africa. In the last 15 years the literacy rate has risen from 30 per cent to nearly 90 per cent.

The success of the literacy campaign heightened the people's expectations as the programme included courses in nutrition, health and political education. But Tanzania remains one of the poorest countries in Africa.

New Course in Biotechnology

Monash University in Melbourne will introduce a Master of Biotechnology (MB) degree course in October this year. The course will teach genetic engineering, other biotechnology techniques, as well a methods of applying the technology to industry, medicine, agriculture engineering and other fields.

The curriculum will include analyses of the impact of biotechnology on industrial management and legal and ethical issues of the technology. The course will seek to train graduates who are embarking upon a career in biotechnology and to educate working professionals in the potential of the subject. It will also build upon the expertise in biotechnology which already exists at Monash and will complement the work of biotechnologists at the Commonwealth Scientific and Industrial Research Organisation.

Professor Solly Faine, of the University's Microbiology Department, who is the chairman of the committee which designed the new course, said Monash had established an enviable reputation for research using biotechnology, "but we also look upon ourselves as an important centre for biotechnology education."

The MS degree is offered to honours graduates in science or engineering as a year long full-time course, with provision to take two years to complete, if necessary.

Recent Publications

1. Handbook of Medical Education-1987	:	Rs. 45.00
2. Monograph on Sample Free Item Analysis	:	Rs. 50.00
3. Bibliography of Doctoral Dissertations in Social Sciences & Humanities 1983-84	:	Rs. 180.00
4. Educational Statistics at a Glance	:	Rs. 75.00
5. Education and Economic Development	:	Rs. 25.00

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CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
eptember 10-15, 1987	Seminar on Contemporary Indian English Poetry.	To apprise the participants of the emerging trends in Contemporary Indian English Poetry.	Govt. P.G. College, Dharamsala (H.P.)	Dr. Atma Ram, Principal, Govt. P.G. College, Dharamsala-176 215 (H.P.)
eptember 18-21, 1987	National Seminar on Energy Education	To discuss various aspects of energy education—meaning and scope, resources, institutionalisation, teacher preparation, curriculum development, and role of mass media.	Department of Education, Rohilkhand University	Dr. Beena Shah, Organising Secretary, NASEEZ, Department of Education, Rohilkhand University, Bareilly-243 001, U.P.
ept. 21 - Oct. 4, 1987	Training Course in Research Methodology in Geography	To expose the participants to research methods in Geography and quantitative and cartographic techniques employed in Geographical research	Department of Earth Sciences, Manipur University, Imphal.	Dr. R.P. Singh, Dpartment of Earth Sciences, Manipur University, Imphal.
ctober 5-9, 1987	Short-term Course on Advanced Image Processing for Remote Sensing.	To appraise the scientists/engineers, working in the area of Image Processing and its Applications to Remote Sensing, regarding techniques, developments and future trends in the field of Image Processing.	Indian Space Research Organisation (ISRO) in collaboration with IIT, Bombay.	Dr. T.V. Pavate, Chief Project Engineer [CSRE], Principal Programme Coordinator (Training), ISRO-IIT (Bombay) Space Technology Cell, CSRE Building, Indian Institute of Technology, Powai, Bombay, 400 076.
ovember 16-20, 1987	Seventh National Symposium on Radiation Physics	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
ovember 25-27, 1987	International Conference on Mud Architecture	To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.	Ministry of Urban Development, Govt. of India, in collaboraton with the Govt. of Kerala, HUDCO and the All India Housing Development Association.	Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & Urban Development Corporation, K.G. Road, Bangalore - 560 009.
ovember 26-28, 1987	International Seminar on Instrumental Methods of Electro-Analytical Techniques.	To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electroanalysis.	Indian Institute of Science, Bangalore.	Prof. M.H. Dhananjaya, Principal and Chairman of the Organising Committee, S.J. College of Engg., Mysore.
ecember 7-11, 1987	Seventh Triennial International Conference on Thin Films. (ICTF-7)	To take stock of recent progress in the field of science, technology and applications of their films.	Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.	Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.

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Dr. S. Bhatnagar
DIRECTOR

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The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is open from 9-00 a.m. to 5-30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

ADDITIONS TO AIU LIBRARY

Abcarian, Richard and Klotz, Marvin, ed. *Literature : The human experience.* New York, Martins Press (c 1982) xxxi, 1260p.

Aiken, Lewis R. *Assessment of intellectual functioning.* Boston, Allyn and Bacon (c 1987) viii, 456p.

Atwater, Eastwood. *Psychology of adjustment : Personal growth in a changing world.* New Jersey, Prentice-Hall (c 1987) xv, 429p.

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Barrett, Norman. *Great moments in sport.* Bristol, Purnell (c 1982) 115p.

Cacciotti, Tony. *Cacciotti method : The feel-Good about yourself workout.* New York, Vilard Books (c 1983) 238p.

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Corbin, H. Dan and Williams, Ellen. *Recreation : Programming and leadership.* New Jersey, Prentice-Hall (c 1987) x, 404p.

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Hazary, Subas Chandra. *Student politics in India.* Delhi, Ashish, 1987. xi, 288p.

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Rajaiah, B. *Economics of education : A study of primary education in Andhra Pradesh.* Delhi, Mittal (c 1987) xvii, 179p.

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Saletore, R.N. *Encyclopaedia of Indian Culture. 5V.* Delhi, Sterling (c 1983).

Saunders, E.D. and White, G.B. *Social investigation in physical education and sport.* London, Lepus (c 1977) 103p.

Styan, J.L. *Elements of drama.* Delhi, Vikas, 1976. vii, 306p.

Tewari, V.N. *Punjab : A culture profile.* Delhi, Vikas (c 1984) 90p.

Thakus, Minni. *Raja Ramohun Roy : His social, political and economic ideas.* Delhi, Deep & Deep (c 1987) 188p.

Wain, Kenneth. *Philosophy of lifelong education.* London, Croom Helm (c 1987) 259p.

Walliser, Blair. *Competitive fitness.* New York, Simon and Schuster (c 1984) 175p.

Zaks, Rodnay. *Your first basic program.* Delhi, D.P.B. Publications, 1986. 187p.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Garg, Ram Kripal. *Social philosophy of Gandhi and Vinoba.* Durgawati.

2. Girish Kumar, T.S. *Freedom and alienation in Karl Marx.* NEHU.

3. Krishna Kumari, M. *The concept of superman in Nietzsche and Sri Aurobindo.* Osmania.

4. Pathak, Sitish Chandra. *Ishwar ke astittva ke sambandh mein diye gaye kuchh pramukh yuktiyon ka ishwaranubhuti ke adhar per mulyankan.* LN Mithila.

5. Shukla, Prabhakar. *Shrimadbhagawat Mahapuran kee raspanchadhyayi ka darshnik vivechan.* BHU.

6. Singh, Dal Singar. *Hindu dharam evam Baudh dharm ke samaj darshan ka ek adhyayan.* BHU.

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2. Prasada, Rao, Narni Deva Vara. *Henry Jame's heroines.* Andhra.

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8. Mishra, Satya Deo. *Bhanbhatt aur Kalidas ke saundarya darshan ka tulnatmak adhyayan.* Gorakhpur.

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1. Balwant Singh. *Punjabi sahit vich kafi kala : A critical study.* Panjab.

2. Sandhu, Sarvinder. *Man-woman relationship in Punjabi novel.* Panjab.

Hindi

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1. Puri, Karan Jit Singh. *Sociological and psychological imensions of Krishan Chander's novels.* Jammu.

arathi

1. Adhaoo, Yadaorao Z. *Vithhalrao dakshtraya dhare anche sahitya : Ek chikitsak abhyas.* Nagpur.

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1. Narayana, T. *A study of folk deities of Chittoor District.* Bangalore.

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Geography

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1. Bhardwaj, Pravesh. *Prabandh-kosh ka itihasik vivechan.* BHU.

2. Dash, Kailash Chandra. *Ananatavarma Codaganga Deva and his times, A.D. 1078 to 1147.* Utkal.

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4. Lahiri, Aloka. *Chaitanya movement in Eastern India.* Utkal.

5. Manjushree. *Agrarian problems and Indian National Congress in the United Provinces, 1931-39.* Delhi.

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COCHIN UNIVERSITY OF SCIENCE & TECHNOLOGY

No. Ac. AI/441/87

Cochin-682 022

ANNOUNCEMENT OF COURSES FOR 1987-88

I. Department of Applied Chemistry, Cochin-22

(i) M.Sc. (Applied Chemistry)

Eligibility : B. Sc. degree with Chemistry main, Physics and Mathematics as subsidiaries with at least 55% marks in Chemistry.

(ii) M. Sc. (Bio-Technology)

Eligibility : Bachelor's degree in-Chemistry/ Botany / Zoology/Veterinary/Pharmacy / Agriculture/ Chemical Engineering/Medicine with a minimum of 50% marks.

(iii) M. Phil (Chemistry)

Eligibility : M. Sc. degree in Chemistry/Applied Chemistry with a minimum of 50% marks.

Note : (a) University/college teachers having 3 years of teaching experience, irrespective of grade/ marks obtained, will also be eligible for admission.

(b) 20% of seats are reserved for University/ college teachers coming under FIP of the UGC.

II. Department of Applied Economics, Cochin-22

M. Phil. (Applied Economics)

Eligibility : Master's degree with at least 50% of aggregate marks.

III. Department of Computer Science, Cochin-22

M. Tech. (Computer and Information Science)

Eligibility : 1. B. Sc. (Engg.) or an equivalent degree in Electronics, Electronics and Communication Engineering, Electrical Engineering, M. Sc. Physics (with Electronics), M. Sc. Mathematics, M. Sc. Computer Science, Grad. IETE and AMIE (Electrical).

2. A pass in Graduate Aptitude Test in Engineering (GATE) examination. Those who have not passed the 'GATE' examination may apply, but they will be considered for the remaining seats, if any, on their passing a written test and an interview.

IV. Department of Electronics, Cochin-22

(i) M. Tech. (Electronics)

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2. A pass in Graduate Aptitute Test in Engineering (GATE). Those who have not passed the 'GATE' may also apply, but they will be considered for the remaining seats, if any, on their passing a written test and an interview.

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Eligibility : First Class B. Sc. degree with Physics main and Mathematics subsidiary.

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(i) Certificate Courses : Part-time-One Year

(a) German (b) Russian

Eligibility : Bachelor's degree

Diploma Courses : Part-time

(a) German (b) Russian

Eligibility : Bachelor's degree and Certificate in the language concerned. Other eligible graduates are also admitted subject to passing an entrance test.

VI. Department of Hindi, Cochin-22

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(ii) Post Graduate Diploma in Translation, Administrative Drafting and Reporting in Hindi.

Eligibility : Bachelor's degree with Hindi as one of the subjects.

(iii) M. Phil

Eligibility : M.A. degree in Hindi with at least 50% aggregate marks.

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M. Sc. (Industrial Fisheries)

Eligibility : Bachelor's degree with Zoology/ Botany/Fisheries or Chemistry (main) with Zoology and Botany as subsidiaries with at least 55% marks in the optional subjects.

VIII. Department of Law, Cochin-22

LL. M.

Eligibility : Bachelor's degree in Law with at least 45% marks.

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A. Marine Biology, Microbiology & Biochemistry division : M.Sc. (Marine Biology)

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B. Physical Oceanography and Meteorology division : (i) M. Sc. (Oceanography) and (ii) M. Sc. (Meteorology)

Eligibility : 55% marks for the B. Sc. degree in Physics (main) with Mathematics or/ and Chemistry subsidiary or Mathematics (main) with Physics or/and Chemistry subsidiary.

C. Marine Geology division.

M. Sc. (Marine Geology)

Eligibility : Bachelor's degree in Geology with at ast 50% of aggregate marks for optionals.

. Department of Mathematics and Statistics Cochin-22

(i) M. Sc. (Mathematics)

Eligibility : B. Sc. degree in Mathematics (main) ith at least 55% marks in the optional subjects ken together.

(ii) M. Sc. (Statistics)

Eligibility : B. Sc. degree in Mathematics/Statistics main) with at least 55% marks in the optional sub-ects taken together.

(iii) M. Sc. (Operations Research and Computer pplications)

Eligibility : B. Sc. degree in Mathematics/Phy-ics or statistics with Mathematics subsidiary, secur-ng not less than 55% marks in the main or ubsidiaries OR B. Sc. (Engg.) with at least 50% narks.

(iv) M. Phil (Mathematics)

Eligibility : M. Sc. degree in Mathematics with t least 50% marks.

XI. Department of Polymer Science and Rubber Technology, Cochin-22

M. Tech. (Polymer Technology)

Eligibility : 1. At least 50% marks in B. Tech. n Polymer Science & Rubber Technology/B. Tech. Chemical Engineering or Technology/M. Sc. Polymer Chemistry/M. Sc. Chemistry with Polymer Chemis-ry specialisation.

2. Pass in Graduate Aptitude Test in Engineering (GATE]. Those who have not passed the GATE may also apply, but they will be considered for the remaining seats, if any, on their passing a written test and an interview.

XII. Department of Physics, Cochin-22

M. Sc. (Physics)

Eligibility : B. Sc. degree in Physics (main) and Mathematics subsidiary with 55% marks is Physics.

(ii) M. Phil (Physics)

Eligibility : Master's degree in Physics with 50% aggregate marks.

XIII. School of Management Studies, Cochin-22

(i) M. B. A. (Full-time) } will be notified
(ii) M. B. A. (Part-time) } separately

(iii) M. Phil (Commerce)

Eligibility : M. Com. degree with 50% marks.

XIV. School of Environmental Studies, Foreshore Road, Cochin-16

M. Sc. (Environmental Studies)

Eligibility : Bachelor's degree in Science/Engineering or Technology with at least 55% marks in the optional subjects in the qualifyiyg examination.

General Information

1. SC/ST candidates are eligible for a concession of 5% in the minimum marks.

2. Admission to the various courses will be based on rules of reservation separately applicable to professional and post-graduate courses.

3. Twenty-five per cent of seats for the M. Phil. degree courses (except in Applied Chemistry) are reserved for College/University teachers. Such candidates with not less than 3 years of teaching experience are eligible—irrespective of grade/marks.

4. Five seats of M.Sc. degree course in Industrial Fisheries are reserved for the Government of Kerala of which 2 are for officers of the Department of Fisheries and 3 are for candidates belonging to the Fishermen Community.

5. Hostel Accommodation will be available only for Limited Number of Candidates.

6. Application forms and details of admission can be had from concerned head of the Department/School/Division at the address indicated on payment of Rs. 60/- in the case of Sl. Nos. I, (ii), III, IV (i), IV (ii), VII, IX (c), X (iii), XI and XIV, Rs. 30/- in all other cases, in cash or by postal order payable at Cochin-682 022 and drawn in favour of the concerned Head of the Department along with a self addressed stamped (Rs. 1.40) envelope of the size (9" x 6"). Completed applications must reach the concerned Department/School latest by **22 September, 1987**.

7. Application forms will be issued only from **24 Aug., 1987**.

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Departments of Applied Chemistry, Applied Economics, Computer Science, Electronics, Hindi, Law, Mathematics & Statistics, Physics, Polymer Science & Rubber Technology and School of Management Studies.

At Fine Arts Avenue, Cochin-16

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Eligibility : At least a second class master's degree in the concerned subject with minimum 50% marks. SC/ST candidates are eligible for concessions of 5% marks in the minimum required. Candidates who have passed the national level test conducted by the UGC/CSIR and persons who have been selected as research fellows in any approved research project/scheme of this University will be given preference for registration, provided they are eligible otherwise under the regulations.

Application blanks can be had from the heads of the respective Departments/Schools on a request accompanied by a self-addressed stamped (90 ps) envelope. Completed applications together with a registration fee of Rs. 100/- should be submitted to the concerned Departments/Schools latest by **30 September, 1987**.

V. J. Pappoo
REGISTRAR

CLASSIFIED ADVERTISEMENTS

INDIAN COUNCIL OF MEDICAL RESEARCH

Applications are invited upto **15th September, 1987** for the following posts under the Council's Institutes/Centres :

(A) At the National Institute of Virology, Pune :

Assistant Director (Statistics)—(One Post)—Scale of pay of Rs. 1200-50-1700 (pre-revised). **Qualifications & Experience : Essential :** A doctorate degree in Statistics or Biostatistics or equivalent postgraduate qualifications of a recognised University with 10 years research/teaching experience in Biomedical Research. **Desirable :** Experience in the field work and Epidemiology.

Suitable candidates selected for the post can also be taken on deputation.

(B) At the Vector Control Research Centre, Pondicherry :

(i) Assistant Director—(one post)—Scale of pay of Rs. 1200-50-1700 (pre-revised). **Qualifications & Experience: Essential:** A doctorate degree like Ph.D. in Zoology/Entomology or equivalent postgraduate qualifications of a recognised University with 10 years research/teaching experience in the field of Malaria/Filariasis/Vector control as evidenced by published papers. **Desirable** : Administrative ability and experience in invoking community participation in vector control.

(ii) Senior Research Officer—(one post)—Scale of pay of Rs. 1100-50-1600 (pre-revised). **Qualifications & Experience : Essential :** A first class Master's Degree in Zoology/Entomology from a recognised University with 8 years research/teaching experience in the field of Malaria/Filariasis/Vector control as evidenced by published papers and 5 years experience in case the candidate possessing doctorate degree. Desirable : Ph.D. in the above subject with 5 years experience.

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Senior Research Officer—(one post)—Scale of pay of Rs. 1100-50-1600 (pre-revised). **Qualifications & Experience : Essential :** M.Sc. in Physical/Biological Sciences from a recognised University with 8 years experience in teaching/research and 5 years experience in case of the candidate possessing doctorate or equivalent postgraduate degree and with experience in the field of electronmicroscopy. **Desirable :** A doctorate or equivalent postgraduate qualification.

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Applications complete in all respects should reach the Office by **September 30, 1987**. Persons already in service should apply through proper channel. Applications received after the last date or without complete information may not be entertained.

ANNAMALAI UNIVERSITY
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FACULTY OF ARTS & SCIENCE

NOTIFICATION No. 7/87

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2.	Professor of Inorganic Chemistry	1
3.	Reader in Commerce	1
4.	Reader in Mathematics	1
5.	Lecturer in Commerce	2
6.	Lecturer in Statistics	1
7.	Lecturer in Business Administration	1
8.	Lecturer in Mathematics	1

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(b) Good academic record with atleast second class Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

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(b) Good academic record with atleast second class Master's degree in Business Administration from an Indian University or an equivalent degree from a foreign University.

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R. Rajamanickam
REGISTRAR

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Advertisement No. 5/87

Dated : 5th Aug., '87

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2.	Professor of English	One
3.	Professor of Geography	One
4.	Professor of Physics	One
5.	Professor of Urdu	One
6.	Professor of Computer Science & Engineering	One
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8.	Reader in Journalism	One
9.	Reader in Sanskrit	One
10.	Reader in English	Two
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Age

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Reader	: Not above 40 years
M. Engineer	: Not above 30 years
Technical Officer	: Not above 35 years

Note : (i) Age limit does not apply to the employee of this University.

(ii) Relaxation in age to the extent of five years shall be granted to the candidate belonging to SCs, STs & BCs.

(iii) Age relaxation to the extent of five years will also be granted to the teachers of affiliated colleges who have put in atleast five years service in any of the college affiliated to the Osmania University.

(iv) 14%, 4% and 25% reservations are made for SCs, STs & BCs respectively for the post of Readers only.

Application forms alongwith details can be had from the Director, Dept. of Publications and Press, Osmania University, Hyderabad—500 007 (A.P.) on payment of Rs. 4.50 in person or I.P.O./Demand Draft together with postal charges for ordinary/registered post payable to the Director and by sending self-addressed envelope of 14½ x 26½ cms.

REGISTRAR

INSTITUTE OF CORRESPONDENCE EDUCATION

UNIVERSITY OF JAMMU

ADMISSION NOTICE

Applications are invited for admission to the Three Year B.A./B.Com. Part-I (Gen.) Degree Course and B.A./B.Com. Final (old scheme) through correspondence for the session 1987-88. The above courses have the privilege of internal assessment as is allowed to the Regular candidates.

The candidates who have passed Higher Secondary Part-II (12th class) or equivalent examination thereto are eligible to seek admission in Three Year B.A./B.Com. part-I General Degree Course and those who have passed B.A./B.Com. (previous) examination are eligible to seek admission in B.A./B.Com. (Final) through Correspondence.

The prospectus-cum-application forms containing full information with regard to enrolment, eligibility conditions, and details of fees etc. can be had on all office working days from 8.00 A.M. to 1.30 P.M. from the office of the Institute of Correspondence Education, University of Jammu, Jammu. The price of the prospectus is Rs. 6/- on cash paymen the Counter and Rs. 8/- by post.

In case the prospectus is required post, the amount should be remit through Crossed Bank Draft/Pos Orders drawn in favour of the Direct Institute of Correspondence Educati University of Jammu, Jammu. Mo orders, postal stamps and cheques not be accepted, and the prospectus not be supplied by V.P.P.

Last date for receipt of applicati forms for admission without late fe **14th September, 1987.**

Note

1. The University of Jammu has authorised any educational organisati either recognised or unrecognised make enrolment on behalf of the U versity for any course conducted by t Institute of Correspondence Educati University of Jammu.

2. Candidates already undergoi any University Course are not eligib for admission to the course.

Telephone No. : 46369

Dr. Santokh Ram
DIRECTOR (I.C.E.)

BANARAS HINDU UNIVERSITY

Additional Corrigendum to Advertisements

The following Pay Scales for the posts of Professor/Reader/Lecturer/Principal of Colleges as notified earlier vide "CORRIGENDUM TO ADVERTISEMENTS" dated 1.7.1987 **may be read as likely to be revised :**

Name of the Post	Pay Scale in which the Posts were advertised	Pay Scales likely to be revised as
1. Professor	Rs. 1500-60-1800-100-2000-125/2-2500.	Rs. 4500-150-5700-200-7300.
2. Reader	Rs. 1200-50-1300-60-1900.	Rs. 3700-125-4700-160-5300.
3. Lecturer	Rs. 700-40-1100-50-1600.	Rs. 2200-75-2800-100-4000.
4. Principal of Colleges	Rs. 1500-60-1800-100-2000-125/2-2500.	Rs. 4500-150-5700-200-7300.

It Pays To

Advertise

In

University News

PONDICHERRY UNIVERSITY

128, Rangapillai Street,
Pondicherry 605 001

Advertisement for
Faculty Positions in Physics and History Departments

Applications are invited so as to reach e undersigned (by designation) on or fore **15th September, 1987** for the llowing faculty positions in the Central niversity Departments.

Department of Physics (JIPMER omplex of Central University)

One Post of Professor

epartment of History

One Post of Professor
One Post of Reader
One Post of Lecturer

ualifications

rofessor

The candidate should be an eminent holar in the subject with published ork of high quality apart from Ph. D. ctively engaged in research work with bout 10 years' experience in teaching nd/or research and have experience in uiding research at doctoral level or he hould be an outstanding scholar with stablished reputation who has made gnificant contribution to knowledge.

eader

The Candidate should have good cademic record with a doctoral degree r equivalent published work. He hould also be actively engaged in esearch or innovation in teaching ethods or production of teaching aterials. He should have about five ears' experience of teaching and/or esearch provided that atleast three of hese years as a lecturer or in an equi- alent position.

ecturer

The candidate should have : (a) a octorate degree or research work of an qually high standard and (b) good cademic record with atleast a high econd class Master's degree in the rele- ant subject from an Indian or Foreign niversity. Two years of teaching or esearch experience preferable.

reas :

Physics

Theoretical Physics,

Theoretical Physics, Experimental Solid tate Physics—Medical Physics

History

The following will be the areas of pecialisation for History

1. Ancient History Including rchaeology
2. Modern Indian History including Indian Culture
3. European/American/Russian History
4. Asian History with special reference to South East Asia
5. Social/Economic History in India

Pay Scales and Age Limit

Professor : Rs. 4500—7300 : Below 50 years (Revised scale)

Reader : Rs. 3700—5300 : Below 45 years (Revised scale)

Lecturer : Rs. 2200—4000 : Below 40 years (Revised scale)

The posts carry the usual pay and allowances in addition to basic salary as per U.G.C. norms. Higher start may be considered in deserving cases by the Selection Committee.

The Selection Committee reserves the right to relax the qualification and experience in exceptional cases. The University reserves the right to shortlist the candidates to appear for interview.

Statutory reservations for SC/ST/PH will be made. Canvassing in any form will instantly disqualify the candidates.

The applications should be in duplicate on plain paper containing full information about the candidate including his qualification, work and Research experience, papers presented, books written etc,, present position held, place and date of birth, domicile and nationality, extra-curriculur activities etc. with two academic references.

Applications should be accompanied by a Demand Draft for Rs. 50/- (Rupees fifty only) payable to the FINANCE OFFICER in any Nationalised Bank at Pondicherry. S.C. & S.T. candidates may send Demand Draft for Rs. 17/- (Rupees seventeen only).

Last Date : 15th September 1987

P.R. Ramanathan, IAS
REGISTRAR

ANNAMALAI UNIVERSITY
ANNAMALAINAGAR

Faculty of Engineering and Technology

Notification No. 6/87

APPLICATIONS are invited in the prescribed form for the following posts in the Faculty of Engineering and Technology of this University.

1. Professor of Soil Mechanics in the Department of Structural Engineering —1 No.
2. Professor [of Electronics and Instrumentation in the Department of Instrumentation Engineering —1 No.
3. Professor of Electrical Engineering in the Department of Electrical Engineering —1. No.
4. Reader in Mechanical Engineering —1. No.

Qualifications

Professor

A person with a distinguished academic record with Doctorate degree and with ten years of experience of Teaching at the post graduate level and of guiding research at Doctoral level with publications of high quality to his credit.

OR

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of Teaching and/or research. Experience of guiding research at Doctoral level.

OR

An outstanding Engineer/Technologists with established reputation who has made significant contribution to knowledge.

Reader

A person with a good academic record with a Doctor's degree in a relevant field about 5 years' experience of teaching and/or research and development.

Provided further that candidates not possessing Ph.D., may be considered if they have to their credit equivalent research published work or design/development work of a high order either in the institution or in the industry.

In the case of persons to be recruited from Industry or Professional fields. Candidates should possess M.Tech./M.E. with recognised professional work of about 7 years which include innovation and/or research and development.

Scale of Pay

Professor : Rs. 1500-60-1800-100-2000-125/2-2500 with admissible allowances.

Reader : Rs. 1200-50-1300-60-1900 with admissible allowances.

These scales of pay will be revised on the basis of the recommendations of the UGC shortly.

Those who are appearing for interview for the post of Professor will be paid a single first class to and fro railway fare and for the post of Reader a single second class railway fare.

Those who are in service should route their applications through proper channel.

Application forms can be had from the undersigned on payment of Rs. 10/- by cash/money order/postal order (not refundable). Filled in application (with 5 additional copies) should reach the undersigned on or before 10.9.1987.

R. Rajamanickam
REGISTRAR

S.V.E. Society's

RURAL ENGINEERING COLLEGE, BHALKI-585328

Dist. Bidar (Karnataka State)

Recruitment of Faculty

Applications are invited on plain paper giving detailed bio-data (in duplicate) for the following posts within 15 (fifteen) days of publication of this advertisement :

A. Teaching Departments

(i) Professors/Asst. Professors in the Department of Civil Engineering, Mechanical Engineering, Electronics & Communication Engineering, Industrial Production Engineering & Computer Science.

(ii) Lecturers in the Department of Physics, Chemistry, Mathematics, Engineering, Economics, Architecture and Town Planning, in Civil Engineering, Mechanical Engineering, Electronics & Communication Engineering, Computer Science and Industrial and Production Engineering.

B. Non-Teaching Staff

(i) Workshop Superintendent in Mechanical Department.

Pay Scale and Qualification for the Various Posts

Professors

Scale 1500-2500 (Total emoluments at the minimum of the Scale is Rs. 3006.25)

The candidates should be M. Tech. with a minimum experience of 7 years. Ph.D. or a person scholarly published work of high repute will be preferred.

Asst. Professors

Scale 1200-1900 (Total emoluments at the minimum of the Scale is Rs. 2584.75)

The candidate should be M.Tech. with a minimum of 5 years experience. Preference will be given to a candidate with Ph.D.

Lecturers

(1) 1050-1950 (Total emoluments at the minimum of the scale is Rs. 1529.00)

The Scale is applicable to candidates with qualification of B.E. in case of Engineering and M.A., M.Sc. in case of applied Science with first class.

(ii) 700-1600 (Total emoluments at the minimum of scale is Rs. 1673.75)

This scale is applicable for candidate with Master degree in case of Engineering and Ph.D. in case of Applied Sciences. Further minimum four advance increments are allowed to such candidates in the above scale.

Workshop Superintendent

Scale Rs. 1100-1600 with minimum total emoluments of Rs. 1560.50. Degree in Mechanical Engineering with 5 years experience/Diploma in Mechanical Engineering with 10 years experience in a responsible supervisory job in the similar capacity or a long experience in a minimum similar capacity.

PRINCIPAL, I/c

GOVERNMENT OF INDIA FELLOWSHIP SCHEME FOR POSTGRADUATE WORK IN FORENSIC SCIENCE

Applications are invited from the Indian Nationals for award of Fellowships for Post Graduate Research work in all branches of Forensic Science. No. of Fellowships to be awarded is twelve. Value of each Fellowship is Rs. 800/- per month for the first two years and Rs. 950/- per month for the third year plus a Contingency grant for Scholar and Department of Rs. 5,000/- and Rs. 3,000/- per annum respectively. The Fellowship are tenable for three years. Each selected fellow would be required to register and work for Ph.D. Degree. The selected fellow will be required to carry out research work in Forensic Science in a University/Indian Institute of Technology/ Forensic Science Laboratories and allied institutions. The Fellows would submit thesis for the Doctorate Degree.

Qualifications : 1st/2nd class Master's degree in Physics/Chemistry/ Bio-chemistry/Anthropology/Microbiology/Biology/Mathematics and Forensic Science or M.Phil in the same subjects whichever is the basic qualification for the award of a Ph.D. degree of a recognised Indian University.

Age : Preferably below 30 years on 1-7-1987.

Reservation : Twenty percent for the total number of fellowships are reserved for Scheduled Caste and Scheduled Tribe candidates.

Rules etc. : Copies of rules of fellowship Scheme and prescribed application forms can be had on request from the Section Officer, Central Forensic Institutes Section, Bureau of Police Research and Development, Block No. 11, 3rd Floor, CGO Complex, Lodhi Road, New Delhi-110 003.

Due Date : Applications on the prescribed form should be addressed to the Director (Research & Development), Bureau of Police Research & Development (Ministry of Home Affairs), Block No. 11, 3rd/4th Floor, CGO Complex, Lodhi Road, New Delhi-110 003, superscribing on the Cover "APPLICATION FOR POST GRADUATE FELLOWSHIP IN FORENSIC SCIENCE" so as to reach him **by 31st August, 1987**. If a candidate is already working in a University or "Government Institutes, he/she should apply through the Head of the Institution in which he/she is working. Every application shall be accompanied by the following documents :-

(a) Matriculation or School Leaving Certificate in support of age ;

(b) Copies of all the degree, diploma or certificates alongwith marksheets, duly attested by a Gazetted Officer of the Central or State Govt. or by the Head of the Institution.

(c) Copies of the published work, if any. Originals should not be sent. The original shall, however be sent, if the Bureau of Police Research & Development (Ministry of Home Affairs) so require.

davp 561(83) '87

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg,
New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
[illegible] chetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055. Tel. 529157

University News

ONDAY, AUGUST 31, 1987

Rs. 1.50

UNIT

15 SEP 1987

C. F. T. R. I., MYSORE

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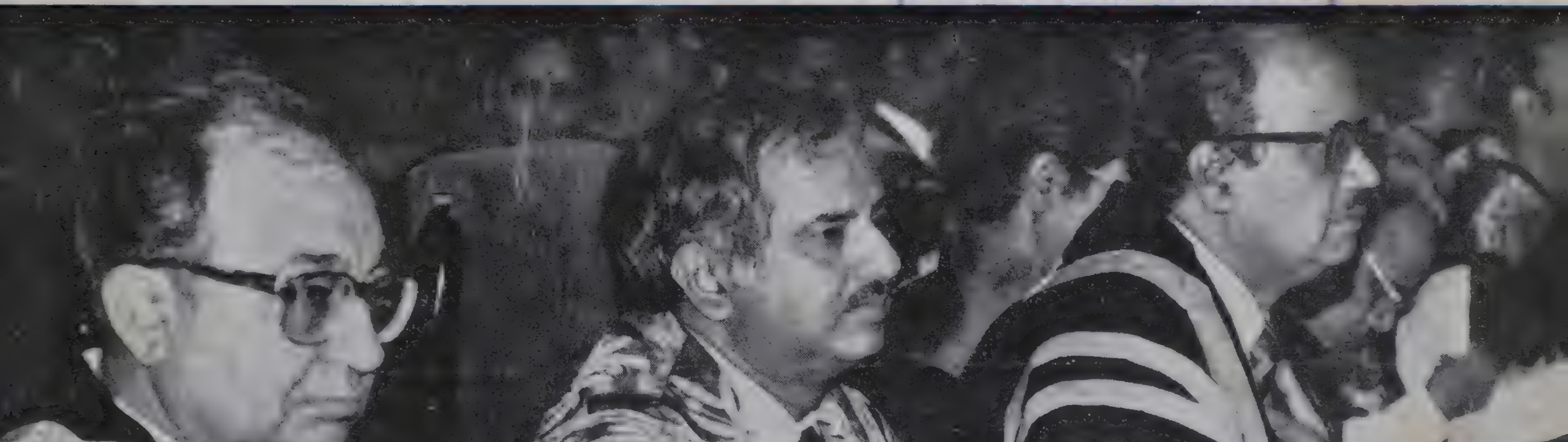

. D. Raj Reddy (second from left), Director, Robotics Institute, Carnegie Mellon University, Pittsburg, USA, delivered the convocation address at the IIT, Bombay. Seated on his right and left are Shri D.V. Kapur, Chairman, Board of Governors and Prof. B. Nag, Director of the Institute respectively

No. 3874/87/AII/(4)/Admn.

GANDHIJI UNIVERSITY

NOTIFICATION

Applications are invited from qualified candidates for appointment to the following posts in the University.

Name of Department	Category and No. of posts	
Basic Medical Sciences	Professor	— one
	Reader	— Two
	Lecturer	— Four
Polymer Chemistry	Reader	— Two
	Lecturer	-- Four
International Relations	Reader	— Two
	Lecturer	— Four

Forms of application and other details regarding qualifications, age, scale of pay, etc., can be had directly or by post from the Office of the Gandhiji University on requisition, specifying the post for which the form is required, and on payment of Rs. 2/- through the prescribed pay-in-slip at any branch of the State Bank of Travancore. In the case of persons residing outside the State Crossed Postal Order for Rs. 2/- drawn in favour of the Finance Officer will be accepted. The requisition for application forms shall be addressed to the **Registrar, Gandhiji University, Kottayam, Kerala—686 002**. Those who wish to get the application by post shall also send a self addressed envelope of size 27 cm x 12 cm along with the request.

Note : Those who have applied for the above posts in response to University Notification dated 22nd January 1986 need not apply afresh. They need only send details regarding additional qualifications, if any, acquired subsequently. However, those who had applied for the post of Professor in Basic Medical Sciences shall apply again.

The last date for the receipt of filled in application is 25th September 1987.

Prof. K. Madhavan Pillai
REGISTRAR

Office of the
Gandhiji University
Kottayam-686 002
Dated, 20th August 1987.

UNIVERSITY
NEWS

L. XXV AUGUST 31
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Weekly Chronicle of Higher
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Opinions expressed in the articles re those of the contributors and o not necessarily reflect the olicies of the Association.

itor:
UTINDER SINGH

IBRARY & DOCUMENTATION
UNIT
15 SEP 1987
C.F.T.R.I. MYSO

THE TEACHERS' STRIKE

G. B. K. Hooja*

Gajendra Gadkar Committee Report on Governance of Universities & Colleges (1971) *inter alia* observed the following :

> "We would like to emphasise the fact that in the matter of making the university education purposeful, meaningful and significant for the teachers, students and the general community, what ultimately matters is not so much the pattern to which the university and its statutory bodies conform, but the spirit of dedication and the sense of purpose which should guide the activities of those who will function in these statutory bodies. The administrative wing of the university as well as the academic wing must work in a spirit of cooperation, understanding, and imagination, and human touch must be present on the university campus, in the classrooms, co-curricular activities and even in purely administrative matters. Lines of communication between different sections of the university community must always remain alive and should never be allowed to be blocked. University organisation should prove to the community at large that debate and dialogue, communication and exchange of ideas carried on freely, fearlessly and objectively, can solve all problems."

In a society where one-third of the people live below the poverty line and two-thirds are illiterate, problems and conflicts are bounds to arise continuously, particularly so in a climate of rising expectations, generated by a democratic system of government. In fact, with passage of years, the patience of the electorate is sure to be exhausted and they may be obliged to take recourse to extra-parliamentary measures. It is in this milieu that the universities which are expected to identify problems, social and physical, all the time and find solutions thereof are expected to give a lead. "*Yena Gataah mahaajanaah, sa panthaa*". The path treaded by the noble is followed by the community. The university teachers are expected to mould by precept as well as speech the style and manner of conduct of the populace and particularly the students, who in time to come shall occupy positions of authority and decision making, so that the society advances to its goals of Justice, Liberty, Equality and Fraternity in a sustained and orderly manner. It is a truism that no university can rise above the standards of its teachers. If the teachers take to the streets, who shall look after the interests of the students, the young hopefuls in whom the hopes of the country rest ?

We shall not enter into the details of Rupees and Nai Paisas dropping into the pay packets of the teachers. Let this be negotiated across the table, from time to time. But we would like to point out that excellence is the hallmark of a university and if merit suffers on account of nepotism, casteism, regionalism, son-o-soilitis, rule of sifarish, queue-jumping and politicking in any form the university system is bound to degenerate ; and this is what we have to guard against. This exactly is the justification for the National Testing Service (NTS) at the point of entry into the educational profession.

(*Continued on page 14*)

**Former Vice-Chancellor, Gurukula Kangri Vishwavidyalaya, 5, Abul Fazal Road, New Delhi-110 001.*

Vocationalization and the Need for Community/Junior Colleges

K. L. Joshi*

Education Policy and its Implementation

It has been nearly 21 years since the report of the Education Commission was published (1966) and three Education Policy Statements followed. The First was in 1968 based on the recommendations of the Education Commission with some practical points of modification such as, placing of +2 stage both in Schools and Colleges. As the statement had many difficulties in implementation, the Second and revised Policy was framed as a draft in 1979 but could not be put up for action on account of political changes at the Centre and the economic and social environment uncongenial to the implementation of recommendations. The Third Policy Statement following the publication of the **Challenge of Education—a policy perspective, August 1985,** was published in July 1986 which is now being implemented but is not free from the constraints described in the "challenge" document though liberal financial provisions, along with a raise in teachers' salaries, are being made.

The question is how far the Policy will succeed in implementation. It has got the blessings of Central Advisory Board of Education, along with the labour of 23 task forces basic to which is the excellent "challenge" document which diagnosed the limitations and constraints but finds it hard to provide remedies and solutions. It has got Parliamentary support. There are three types of people whose reactions have to be taken into consideration. The first type is that of persons, mostly bureaucrats who can't think of anything else but the policy and hail it as an important statement for educational programme. The second type is that of die-hard cynics among the intellectuals found in the midst of College & University Teachers who don't think much of any policy of this type and who feel that the real change, social and economic, can be brought about only by Leaders of Teachers who through organized thinking and programme of action can bring about a revolutionary change, if finances were available. The third type is that of the silent spectators who read through papers the changes taking place and wait for the best results in spite of corrupt practices and ill-managed institutions.

Actually the real policy of development is the one that can be chalked out by the Planning Commission which is aware of the social, political and economic compulsions and discusses annual plan of every State for implementation and provides funds every year. They have to be advised by the Ministry of Human Resource Development and the State Governments' Departments of Education. Most of the new ideas will have a gestation period and will be taken for consideration in the VIII Plan, after watching the progress during the next 2-1/2 years of the current VII Plan.

The Minister of Human Resource Development has recently stated that he was open to any new ideas and any reasonable improvement in the policy. To that extent, new ideas could be incorporated in the annual and the VIII Five Year Plan.

We might state that the "challenge" document and the New Education Policy analyze the difficulties in the educational scene but palpably do not reduce them to four fundamental ingredients of the scenario. These are : (1) Finance; (2) Numbers; (3) Structure; and (4) Co-ordination in management, administration and organization. Promise of larger financial provision does not take into consideration that our per capita income is very low and we do not consider the masses that are below poverty line and are estimated to be about 40% of the population. In advanced countries High-tech education has been provided five to ten times amounts that we could provide. The priorities of the needs of people are—employment, shelter, food and good drinking water. The economic planning seems to take care of these first and education gets lower priority.

The numbers in Schools & Colleges have risen to figures which the Education Commission had not realistically anticipated. 20 years ago in relation to financial provisions, 6% of national income may have been adequate but is now insufficient for this biggest sector of economy from the point of view that today we are providing resources for education only next to

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**Former Vice-Chancellor, Devi Ahilya Vishwavidyalaya, Indore, B/1, Madhuben, F. C. Road, Pune-411004.*

ose for Defence. However attempts are being made do as much as we can.

But the third factor of structure remains a pro- em and it is linked with the corruption that has tered into the system in administration, organi- tion and management. Assuming that this latter uld be remedied the third factor of structure needs be reconsidered.

hy Junior/Community Colleges ?

The biggest single problem in the System of dian Education is **structure and articulation**. From 44, that is from publication of the Sargent Report, rough Radhakrishnan Report on University Educa- on, 1950, Mudaliar Commission on Secondary ducation, 1953, Sampurnananda Committee Report 62 and Education Commission (Kothari) Report 66, we have had perplexing, contradictory and ompromising recommendations, though the Kothari ommission finalized the structure as 10+2+3. But -2 sector which is the most important segment of ducation in the report seems to be handled in a half- earted way. Some reflection on the background of is pattern may help us understand the present osition.

The problem was no doubt recognized by the ducation Commission (1964-66) but it suggested the adler Commission (1919) pattern of 10+2 upto ntermediate standard followed by a 3-year degree ourse. This was also a recommendation of the adhakrishnan Commission (1950). But the Sargent eport (1944) and the Mudaliar Report (1953) sug- ested 11+3 pattern and Sampurnanand Committee 1962) again recommended 10+2+3 pattern with the uggestion that+2 may be in Colleges or Schools, a lexible approach suggesting also Junior Colleges at he +2 stage. The Education Commission (1966) ecommended the 10+2+3 pattern but used the term Higher Secondary School for the +2 stage. Histori- ally, since the establishment of the three Universities f Caluctta, Bombay and Madras in 1857, the two lasses (+2) have been with the Universities as ntermediate Classes and major universities always ound it difficult to part with these classes, with the xception of Universities in U.P. which had stablished separtate Intermediate Colleges that could s well have been turned into Junior/Community Colleges of the U.S.A. pattern. It is historically nteresting that the three Universities of Calcutta, Bombay and Madras had decided against the ecommendation of the Sadler Commission (1919) in spite of pressure from the Central Govt. They pointed out that such a system was uneducational, unacademic and uneconomical.

The reasons given by Education Commission (1966) for the failure of the Sargent Report recommendation of 11 year higher secondary system, might apply to the 12 year school proposed by them (Education Commission Report, pp 25-28) (*See also* author's **Problems of Higher Education in India,** Popular Prakashan, 1977, p. 139). My point in brief is that for Indian Conditions if 11 years' Higher Secondary Course was a failure it would also be a failure for the 12 year school.

Comparative Perspective

During the last three decades we have been influenced by the World View of Education (*See,* Eric Ashby, **Structure of Higher Education : A World View**, 1972). Our System of Education was British historically and since the establishment of three Universities of Calcutta, Bombay and Madras in 1857 we have developed over 160 Universities today with lakhs of students. All over the world numbers of institutions have increased. But in India, Curzon & Sadler apparently placed before us the Oxford model which is inimitable for any country. The Education Act of 1944 in U.K. (Butler Act) reformed the school system with emphasis on VI Form where a student spent two or three years, preparatory to Higher Education. Our Intermediate Classes in the colleges of the Indian university system were meant for the same purpose and they should once more be revived in the form of Junior/Community Colleges and also in the existing colleges.

The U.S.A. pattern of 12 + 4 is very costly for us. Education Commission had quoted Matchlup & Weisner at page 24, stating that for modern age of science and technology years of schooling have to be abridged. In terms of the Carnegie Commission Reports (1968-74) and particularly the report **Less Time, More Options**, 1971 this is possible. It is no use therefore prolonging the 10 year school to 12 years and adding the Intermediate Classes to the school system for Indian conditions.

We are influenced by the British system of VIth Form +3 year degree course, the U.S.A. system of 12 year school +4 year of degree education and the U.S.S.R. system of 10 year schooling +5 years of degree education (2+3). But we have confused our pattern so much that we have created two Boards, one at S.S.C. level of 10th class and the other at the 12th class—both created by State Govts. and controlled by them.

Modification to the recommendation of Education Commission was seen in the report of the Committee of the Members of Parliament on Education, 1967, which said "as a transitional measure the attachment of these classes (11th & 12th) to colleges may be continued, where necessary". However the Ministry of Education later seems to have come to a final conclusion in the National Policy on Education (1968) stating "it will be advantageous to have broadly uniform educational structure in all parts of the country. The ultimate objective should be to adopt the 10+2+3 pattern, the higher secondary stage of two years being located in schools, colleges or both according to local conditions".

This has created utter confusion. students with good grades in 10th class Board's Exam go to the colleges where 11th & 12th classes are available only to the best students and a few select schools which do not have academic facilities of good teachers, libraries, laboratories, accommodation, and equipment admit the remaining students. NCERT takes charge of these two classes for courses of study and textbooks without the facilities of Academic Councils and Boards of Studies of the universities.

Clearing of Confusion

To clear the confusion, without creating more problems in relation to the New Education Policy, 1986, I suggest the following steps :

(1) The School should be recognised as a 10 year institution on the U.S.S.R. pattern in which initiation to science and technology is made in the school system.

(2) This should be followed by a 2 year institution to be called Junior or Community College incorporating other institutions of vocational training such as ITIs (Labour & Employment Ministry), Polytechnics (3 year course), Junior Colleges for primary teachers and various other craftsmen training institutions involving the Ministries of Education (now H.R.D.), Labour, Defence, Industry, Health, Agriculture, Railways, Transport & Communication, etc., whose need for middle level manpower is recognised and also the private institutions for craftsmen training for both men and women.

(3) The two classes can also continue in the colleges affiliated to Universities as Intermediate classes (and not Higher Secondary Classes—a phrase typical of Indian coinage).

(4) The Universities will have 5 classes in their affiliated colleges, 2+3, and will hold examinations for Arts, Science, Commerce, Vocational Courses of all types and of various duration, (certificate, diploma and special). The courses of studies will be decided by the universities through their Boards of Studies and Academic Councils.

(5) There will be Special Division in the UGC for maintenance of academic standards in Junior/Community Colleges, and the U.G.C. should be given generous financial provisions for grants. For their academic requirements the Junior/Community Colleges would work in collaboration with the State Governments.

(6) For this purpose the U.G.C. will have a special Council or Board for middle level manpower training programme and for maintenance of academic standards. They will have members for coordination from the AICTE (All India Council of Technical Education), NCTVT (National Council for Training in Vocational Trades of the Ministry of Labour & Employment), and representatives of the branches of learning in Agriculture, Medicine, Industry, Railways, Defence, Communication etc. This will be a large council with representatives of State Governments each of which will have a council for the same purpose. It has to be organizationally a perfect body. The Junior/Community Colleges will be affiliated to local Universities.

Vocationalization and the Concept of Junior/Community Colleges

The Conference of Education Ministers and Education Secretaries organised by the Ministry of Human Resource Development in April 1987 discussed mostly vocationalization at the school level with a provision of Rs. 7 crores unspent this year and of Rs. 50 crores for the next year. They discussed the problem of securing trained teachers and practicability of such a step. The question is—will students opt for vocationalization at an early stage ?

Our main stand is some vocationalization may be introduced in schools as hobbies to develop familiarity with equipment but we should have a vision of the future from the point of view of manpower at the iddle level. Real vocationalization needs elementry knowledge of Maths, Physics, Chemistry and iological Sciences at roots.

We therefore suggest the U.S.S.R. pattern of 10 year chool system be adopted with a 2+3 pattern higher ducation. The +2 stage is not a school stage but ne of higher education, an Intermediate stage for igher education and research. It is logical that it hould be accommodated in colleges and also in unior/Community Colleges of the U.S.A. type. The hree year degree course of the U.K. model should ontinue—not the 4 year model of U.S.A. type for he latter is useful only if it is preceded by 12 year chool system of the U.S.A. type. But this is both ostly and wasteful of our inadequate resources. esides some thinkers in U.S.A. feel that "*less time, ore options*" is a progressive educational policy and enowned scholars like—Machlup & Weisner feel that bridgment of 12 year to 10 year (or even less, if ossible) is the need for the modern age. Machlup's tudy on "*Production & Distribution of Knowledge in he U.S.A.* (1962) has indicated that the learning proess in the U.S.A. schools should be accelerated.

Jerome B. Weisner, former Science Adviser to the J.S. President said in 1965 :

"Many people are impressed by the fact that the Soviet Union's *Ten-year* cycle of primary and secondary education requires that all students must take *ive* years of physics, *six* years of mathematics, *three* ears of biology, and *four* of chemistry with the ontent of the work during the last two years eing comparable to that of the usual introduction ourses in these subjects offered in our liberal arts olleges. By contrast corresponding school period ontains twelve rather than ten years but provide on he average only one-fifth as much training in mathenatics and the sciences. There is insufficient evidence o show that the intensity of early Soviet Scientific Training is either necessary or desirable, particularly f it involves sacrifices of some emphasis on the humanities but it is evident that the standard programme in our schools is far from optimum" (Quoted in Education Commission Report p.24).

This indicates that basic education for any further training or education must be thorough as in the USSR's 10 year school and could be a model for us before the students opt for shorter courses in technology (i.e., Polytechnic or I.T.I's) or any form of vocational training or higher realms of intellectual pursuits in colleges and universities.

I suggest that this 10 year school of USSR pattern should be the model for us, followed by a 2 year course in the Junior/Community Colleges of U.S.A. pattern, followed by 3 year course in colleges and universities of the U.K. pattern.

The concept of Junior/Community Colleges has been there with us since 1920s when U.P. established Intermediate Colleges. The Sampurnananda Committee (1962) again suggested it. But there are half-hearted Junior Colleges in States like—Maharashtra, Andhra, Kerala, etc. The only difficulty is that in most of the States lakhs of students appear for the 10th Class (S.S.C.) examination conducted by a Govt. Board and again another Board conducts the 12th Class, examination. Upto 10th class there are not many options but for the 12th class there are many streams of Arts, Science, Commerce basic to further education at degree stage in Arts, Science,

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Commerce, Medicine, Engineering, Technology and other professional courses.

For this purpose the Junior/Community College is the right device recommended by Lord Robbins for dealing with large numbers at the intermediate stage. Robbins, as a witness before the Education Commission mentioned this device but the Commission had suggested the 2 classes should be in school and later the Ministry said they could continue in the colleges as well as schools. This is a half-hearted approach for if they are not in the colleges, they happen to be governed by the Board's regulation and not the academic compulsion of the University.

Eric Ashby and others in the reports of the Carnegie Commission published between the years 1968-74, emphasised the importance of Junior/Community Colleges with Ashby's slogan that—"more is not worse but different."

Private Classes and Institutions provide some training programmes in various crafts and trades and organized institutions such as polytechnics, womens' polytechnics, Junior Teachers Training Colleges (for Primary School Teachers) nursing institutes, Industrial Training Institutes (ITIs) Trade Schools—are all uncoordinated and information is not easily available to community regarding their demands and supply. The existing institutions are inflexible in their courses of study as well as duration. Besides they do not have university status. The following points are significant :

(1) The proposed Junior/Community College belongs to the Community and is created by the Community. It is a repository of information and guidance. Its Director and other authorities are expected to guide and inform anyone who needs short-term or regular training or educational programme. It also serves as a preparatory ground or intermediate stage for transfer to higher education.

(2) There is no blind alley in any course. From the rudimentary to the higher stage all types of courses should be available.

(3) Cultural programmes could be included in this institution.

(4) For the age group 15+ to 18+ all types of courses in trades would be available. Those trades which require only a minimum education of 6 or 7 classes will admit students for training in trades in accordance with their interest and skills.

(5) It is economical to have a network of Community Colleges in proportion to the existing number of high schools and it becomes an answer to the unmanageable numbers in the existing schools.

This international device is current primarily in U.S.A., Canada, Japan and some other countries. We modify the pattern to suit Indian conditions and accept the pattern 10+2+3 (instead of U.S. model of—12+4 or 6+6+2). The aims are:

(1) More generalized Intermediate education for transfer courses to degree colleges;

(2) Junior College education for practical, professional and semi-professional cocational vocations as terminal courses;

(3) Adult Education;

(4) Formation of proper links with colleges of higher learning in Humanities, Science, Commerce, Engineering and Technology, Medicine, Agriculture and all types of specialized and research programmes; and

(5) A counselling service to assist students regardless of age in choosing careers, remedying deficiencies and fitting them as useful and productive citizens.

Conclusion

In the New Education Policy, like the idea of Navodaya Schools and Open University, the device of Junior/Community Colleges at the +2 stage should be introduced coordinating all activities of training at the middle level manpower as an Intermediate stage between the 10 years school and higher or tertiary stage of education as well as terminal stage for vocational courses. A Central Council and State Councils for the purpose be organized. Vocationalization should be properly fitted into this stage. A coordinated administrative and organizational system be introduced. For this purpose just as a delegation was sent to U.K. to study the aspects of Open University, a delegation of Govt. of India should be sent to U.S.A. to study the institutions of Junior/Community Colleges. Our Embassy and the American Association of Community/Junior Colleges (A.A.C.J.C.). Washington, should help. They have experience of organization and management of such colleges from the year 1900. Adoption of this device would bring a revolution in education and ensure success of the New Education Policy. □

Advances in Science & Technology

Dr. D. Raj Reddy, University Professor of Computer Science and Director, Robotics Institute, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA delivered the Convocation Address at the 25th Annual Convocation of the Indian Institute of Technology, Bombay. Dr. Raj Reddy felt that advances of computers, communications, artificial intelligence and robotics will significantly transform the process of invention and scientific discovery. What we will experience during the next one hundred years will far exceed what was achieved over the past one thousand years. This will call for radical changes in our system of education and training. Further, the increase in the rate of change of knowledge was likely to increase the gap between the developed and the third world nations unless scientists in the third world countries harness the same technologies to reverse the trend. Excerpts :

Convocation

When I graduated almost thirty ars ago, before the formation of e IITs, most of us at that time d not heard of the now common-ace terms such as transistor, mputer, satellite, DNA, or for at matter Artificial Intelligence.

Shockley, Bardeen, and Brattain f Bell Laboratories invented the ansistor in 1948. About the same me, Eckert and Mauchley deve-ped a programmable digital omputer based on Von Neumann's heories. The concept of a eosynchronous communications atellite was proposed by Arthur Clarke in 1945 and refined for nmanned operations by John Pearce in the mid-fifties. The louble helix structure of DNA was liscovered by Watson and Crick n 1952.

Most significantly for me, Newell and Simon had demonstrated the concept of the computer as a symbolic system capable of creating proofs of theorems in December of 1954, and the field of Artificial Intelligence was born. At the time of my graduation, I never once heard these terms or the associated concepts. I suspect most of the population of the world still believes that transistor is another name for radio.

And yet these terms and associated concepts were already well-known to the world scientific community, and the leading scientists could predict the implications of these advances. To be sure, not all the advances that seriously impact our lives today were known at that time. For example the integrated circuits, the microprocessor, and the process of gene splicing were yet to be discovered. Yet other predictions such as abundant 'unlimited nuclear power' has never come to pass.

The theme of my talk today is that we live in a society where advances of computers and communications will significantly accelerate the pace of inventions and discoveries, and that, you, the new generation of scientists and engineers will be responsible for harnessing these opportunities to make the world a better place to live.

In simple terms, advances in Science and Technology over the next one hundred years will far exceed those we have experienced over the past one thousand years. This will undoubtedly place a great strain on the process of training, education, and learning, necessitating radical changes in our educational system. Furthermore, this increase in the rate of change of knowledge will most likely increase the gap between the developed and third world nations unless some of you harness the same technologies to reverse this trend.

It is a common adage that we overestimate what can be done in one year and underestimate what can be accomplished in ten years. Events move faster than all but the rarest of minds can predict. Even though prediction is a dangerous business, it is useful to speculate on the effects of emerging technologies so we can be better prepared.

Looking to the future, I am sure that several of the inventions and discoveries which will significantly affect our lives over the next 30 years are already known today: cars that drive themselves, translating telephones, aerospace planes, electronic libraries, superconducting magnets, high-tech ceramics, super strong plastics, lightweight composites and so on. No doubt there will be other significant inventions that none of us can predict or foresee today.

Rather than talk about the products of invention, I would like to share with you some thoughts on the process of invention and scientific discovery. It is my belief the advances in computers, communications, artificial intelligence, and robotics will significantly transform the process of invention and scientific discovery. Many of us are working on tools for reducing the time and cost of processes associated with creation, invention, and discovery. I would like to illustrate the nature of these tools by giving you examples from our own research:

Simulation

One technique that is significantly helping the process of invention and discovery is 'Knowledge Based Simulation''. Computer based simulation is the technique we use to predict the behavior of a system by creating an analogue. Computers have long been used in statistical simulation within operations research to predict the behavior of systems involving random processes. With the increasing availability of high speed supercomputers capable of billions of operations per second, simulation is routinely used for tasks such as prediction of weather.

The same supercomputers are also being used in the design of large and complex aircrafts by a simulation tool often called "the electronic wind tunnel". As many of you know, the creation of physical "wind tunnels" made it possible to predict the behavior of airframe structures within a laboratory environment, eliminating the need for the expensive and deadly process of constructing full scale prototypes to evaluate the airworthiness of a structure, leading to significant improvement in time and cost of producing an aircraft. A similar improvement is expected with the use of electronic wind tunnels where the airworthiness of a proposed design can be predicted directly from a CAD model without having to build a physical model or prototype.

As many of you know, computational costs have been decreasing exponentially, providing 1000 fold improvement every twenty years or so. There appears to be no end to this rate of improvement in the near future. We can be reasonably assured that supercomputers of the size of a "transistor radio" and costing less than $ 1,000 will be available before the turn of the century. How will this development transform our lives? The examples I gave earlier assume the availability of such low cost super computers. The most exciting prospect for me is the possibility of creating the electronic equivalent of laboratories and libraries. In an electronic laboratory, a student can conduct or recreate physics and chemistry experiments, observe the behavior, modify the conditions (even beyond current physical limits) and gain a deep understanding of the process that can never be attained from books. This technology will have a profound impact on less develope countries, making quality universa education possible for student who have no ready access to tes tubes, Bunsen burners, chemicals and instruments that students in a rich environment take for granted.

Dr. D. Raj Reddy
delivering the convocation address

The other exciting possibility is the "electronic library". It appears that advances in computers and communications make it possible for anyone, anywhere in the world, to access and read any book, report, magazine, or newspaper, in any language at a cost of less than a cup of coffee. I will leave it to you as an exercise to derive the necessary infrastructure that must be in place and convince yourselves of the associated economies.

Knowledge Based Simulation is another technique which is beginning to have significant impact on the process of invention, refinement, and adaptation of products to varying customer needs. Unlike wind tunnel simulation which uses finite element techniques, KBS uses the knowledge about the task such as facts, rules, and constraints to create a symbolic simulation of the activity. Thus a symbolic 'factory' would contain description of the machines, capacity and throughput, layout, tools, fixtures, raw materials and processes.

KBS techniques are being used in factory simulation tasks such as production planning, resource planning, layout planning, dynamic scheduling, and operator training. Use of these techniques is not yet widespread because of the need for an interdisciplinary team of experts required for codifying the relevant knowledge into an expert system. As this technology spreads it can be expected to have serious impact on productivity, quality, cost and timeliness which may result in widening the gap and disity between the efficient ducers such as Japan and fficient producers of less eloped countries, eliminating at little labour cost advantage latter may have. A country in ich the costs of raw materials h as steel, aluminium and stics is 200 to 400 percent of the ernational price cannot expect compete in international markets matter what the labour cost vantage.

owledge Bases

The process of invention of w products is expected to ange dramatically with the ation of complete knowledge ses. Such knowledge bases for product would not only contain detailed drawings of the design, t also information on the terials, tools, fixtures, machine ols, numerical control proams, process plan, assembly plan, spection-test-diagnosis-and-repair an, and so on. These knowledge ses are represented in a form so at variation in design and manucturing can be created semitomatically reducing the product velopment cycle by an order of agnitude.

The creation of a National brary of Designs (which includes l relevant manufacturing inforation) will eliminate duplicaon effort and lead to a arket place in which the comodity being traded is knowdge rather than finished products. glimpse of what might be possie is illustrated in a research oject at our Robotics Institute nder the direction of Professor ewiorek. He and his colleagues e able, starting with a broad ecification, to design and conruct a working single board mputer of the complexity of the 3M/PC in less than 24 hours! his is done by codifying all the levant knowledge about design, manufacturing, diagnosis and software creation aspects of creating a single board computer along with a chip database. Similar dramatic reductions in time and cost appear possible in the creation of many other products.

Decision Support Systems

By far, the single largest source of delay in the creation of a new complex product is the paperwork associated with the process. The US Navy creates over 640 forms in the procurement of a single product, requiring many levels of approvals and delays. In one automative application, more than 50 per cent of the delays (of over 70 weeks) was attributed to paperwork: creation of specifications, filling out forms, creating requests for quotations, and so on. The current technologies of electronic mail and word processing, enhanced by task specific software, can eliminate the paperwork nightmare.

Discovery

So far I have given you examples of techniques and processes which are likely to significantly impact on the creation of products which can be characterized by evolutionary rather than revolutionary inventions. Now I would like to share with you some results of research on developing systems that may in the future assist in Scientific Discovery.

Herbert Simon and his associates have, over the past 10 years, built a series of systems which attempt to demonstrate that given the same facts and knowledge, computers can rediscover laws that were considered significant at the time of their discovery.

The Bacon system developed by Simon and Langley rediscovered Kepler's third law of planetary motion, Boyle's law, Galileo's law of uniform motion and Ohm's law. The Bacon-4 system by Simon and Bradshaw rediscovered other physical laws such as the law of conservation of momentum, the law of gravitation. Archimedes' law of displacement, and Snell's law of refraction. It also rediscovered chemical laws such as Avogadro's method of determining melecular formulas.

Conclusion

We have seen how the new tools, based on the computer and communication technologies are revolutionizing the process of invention and discovery. The key to improved productivity appears to be the ability to identify the major sources of cost and delay and to ask how emerging technologies can help in improving this process. Just as the invention of the automobile and the tractor have enhanced our physical capabilities by several orders of magnitude, the information technologies will significantly enhance our mental capabilities and increase the pace of invention and discovery.

To conclude, it is clear that computers and communications can truly revolutionize the nature of research and education in the 21st century. Each of us can have a personalized intelligent assistant which would use voice and vision for man-machine communication, tolerate error and ambiguity in human interaction with machines, provide education and entertainment on a personalized basis, provide expert advice on day-to-day basis, make vast amounts of knowledge available in an active form, and make ordinary mortals capable of performing superhuman tasks leading to new discoveries and inventions at an unheard of rate. It is with great anticipation that I look forward to a world shaped by your scientific endeavors. □

Value Orientation in Higher Education

A National Symposium on Value Orientation in Higher Education will be organised by Sri Sathya Sai Institute of Higher Learning from September 24-26, 1987

Sri Sathya Sai Institute of Higher Learning founded by Bhagavan Sri Sathya Sai Baba, who is its Chancellor, was inaugurated on November 22, 1981. Within five years of its existence, the Association of Indian Universities, on the basis of the report of its Visiting Team, accepted the Institute as a regular member of the Association from April 1986. The then President of the Association indicated that "the team was impressed with the philosophy of education being followed and selected thrust areas adopted for research".

The Institute has many initiatives to its credit and has made considerable strides since its inception. It is unique and has special features in many respects. These are: residential character of the Institute with students and faculty staying on the Campuses, English as the medium of education at all levels believing in spontaneous national integration with an open admission policy enabling students from all over the country to seek admission to various courses, irrespective of income, class, creed, religion or region, making it turly national in character, free education for all who are selected on the basis of merit through a very comprehensive testing and interviewing procedure giving adequate weightage to intellectual attainments, intuitive insight, participation in social work, interest in spiritual life, an understanding of Indian culture and general enthusiasm to learn, evidence of proper motivation and potential for achievement, charging no fees whatsoever for library and laboratory, audio-visual aids, games and sports, extra-curricular activities, medical tests and medical care and examination and tests, development of scientific research at the doctoral level relevant to local and national needs, introduction of educational technology through the installation of a modern space theatre in rural surroundings, providing an opportunity for the students and the faculty to develop various kinds of simulation exercises and also fabricate programmes of a creative and constructive character, implementation of examination reform, continuous avaluation, end semester tests, grading system suggested by the University Grants Commission in a concrete form, integrated courses of five years duration in order to promote continuous education and identify and promote talent, favourable average teacher-pupil ratio of 1 : 6 with closer repport between students and faculty, maximum number of working days, fuller utilisation of national holidays and important festivals for educational purposes and extension work, setting up of new professional faculties like Business Management and Education. and finally combing professional competence with value orientation.

Over and above these innovative programmes with seed value, the results of which may be visible and immediate, the Institute has operationalised the conceptual parameters of value orientation in higher education in concrete form giving a reality to the several recommendations made by various
Commissions and Commitees c
educational reform since Indepe
dence. These programmes we
initiated, even earlier to the settin
up of the Institute as a Deeme
University in 1981, in two campus
one in Brindavan, Bangalore ar
the other in Anantapur right fro
1969. However, the incorporatio
of the programmes of valu
orientation of education as part
the curricular and co-curricula
activities and as integral item
where the Institute has been
pace-setter, began only when th
University came into existence i
1981. Apart from this, the sel
reliance and social service progrmm
which are a part of total valu
orientation have also played
significant role in the developmen
of charater-building and imbibin
national ethical values and inter
national understanding.

To share this experience, th
Institute is organising a three-da
National Symposium on "Valu
Orientation in Higher Education'
from September 24-26, 1987, at it
Prasanthi Nilayam campus.

The Symposium will presen
practical measures adopted by th
Institute to promote among ou
students, qualities of head and hear
an appreciation of basic huma
values in their application in da
to day life through curricular an
co-curricular programmes on th
Campus, leading to overall development of personality in tune wit
Indian ethos and international
understanding. The symposium
will also discuss the possible
application of several measures
adopted by the Institute in this
significant area in the Institutes of
Higher Education. The symposium
is likely be to attended by a number of Vice-Chancellors ond eminent
educationists.

Bio-technology Centre at Anna Varsity

naugurating a Rs. 20-lakh ding of the Bio-Technology tre at Anna University and ng the foundation stone for a tgraduate students' hostel to be structed at a cost of Rs. 34.18 ns, the Tamil Nadu Governor, . S.L. Khurana, said that bio- nnology was capable of finding v solutions to old intractable blems in public health, ironment and agriculture. He d a bio-technology revolution s sweeping the developed intries as a new frontier techno- y. Over the last 10 years more n 200 bio-technology enterprises d sprung up in the U.S. Japan, ich had declared 1981 as the ır of bio-technology, had more n 300 bio-technology R & D ups. "It is up to us to utilise potential for the wellbeing of r people," he said.

Mr. Khurana said one of the ost promising areas where bio- chnology could be exploited was edicine as related to public alth and hoped that our ientists and technologists ould succeed in the mission lating to the production of ccines against polio, measles, bies, hepatitis-B and whopping ugh by 1990 and over a longer rm against cholera, typhoid, eumonia, malaria, leprosy, etc.

Mr. Khurana commended the ntribution of Rs. 10 lakhs (being e first instalment) made by the uthern Petrochemical Industries orporation (SPIC) to the Anna niversity for the setting up of a s. 2.5-crore SPIC bio-process boratory. "It is precisely the nd of industry university collabo- tion that we have been looking rward to", he said and hoped the w centre for bio-technology would be a landmark in the progress towards the new technology.

Mr. A.C. Muthiah, Vice-Chairman and President of the SPIC, said bio-technology was a green field area. The SPIC had identified plant bio-technology and other related fields as a growth area most suited for its diversification plans. Though it had developed a strong R & D base in this area, the collaboration with a premier University such as Anna University lent access to the vast reservoir of scientific talent in our country that deserved a great deal of encouragement.

Dr. V.C. Kulandaiswamy, Vice-Chancellor of Anna University, said the University had an active research programme and ambitious development plans in bio-technology. He said research efforts of Anna University had a well-defined approach and objective. It had been concentrating on programmes and projects that proved that the benefit of high technology could be taken to the masses

Adventure-cum-Shanti Tour

The Amravati University organised an all India Adventure-cum-Shanti tour on scooters under the Govt. of India's scheme for promotion of adventure amongst the university students. The objective of the visit was to create an awareness of adventure, to bring about unity and integrity amongst the various sections of the society, irrespective of caste, creed or religion. The tour of the country covered a period of 40 days. 16 students from the Post-graduate teaching department of the Physical Education headed by Prof V.M. Sharma participated in this historic mission.

Dr. K. G. Deshmukh, Vice-Chancellor, Amravati University flags off 'Shanti Yatra'

The team visited Andhra

Pradesh, Karnataka, Tamil Nadu, Kerala, Maharashtra, Uttar Pradesh, Madhya Pradesh, Jammu and Kashmir, Rajasthan, Punjab, and Himachal Pradesh. Banners were displayed depicting thought provoking slogans like Discard dowry, Religion is humanity, India is a beautiful country and do not break it into pieces on considerations of communalism, regional feelings and casteism. The team also paid visits to the Universities of Bangalore, Raipur, Jabalpur and Kashmir and exchanged views with fellow students. The team covered a total distance of 12,600 kms. The Hon'ble Chief Minister of Jammu and Kashmir entertained the team and exhorted the student community to strengthen the secular forces and to ignore differences based on caste, region and religion.

National Workshop in Electronics

The University Science Instrumentation Centre (USIC) of Gauhati University recently organised a national workshop on Electronics and Instrumentation for college teachers in Physics from July 6 to 18. Inaugurated by Prof. B. Choudhuri, former Head of the Department of Physics, Gauhati University, the workshop was designed as a refresher course in electronics keeping in view the new TDC Physics syllabus in addition to introducing the participants to recent trends in electronics, instrumentation and laboratory practices. Stress was laid on introducing the participants to transducers and microprocessors

Over seventeen teachers from all parts of Assam participated in in the workshop

Special Grant for Gulbarga University

The Karnataka State Government has sanctioned a special grant of Rs. 75 lakhs to the Gulbarga University for construction of buildings. This was stated by Dr. K. H. Cheluvaraju, Vice-Chancellor, recently in Bangalore. He said that the University had already got Rs. 25 lakhs this year and it needed more support for its expansion activities.

Hydrology Centre at Guwahati

A Regional Centre of National Institute of Hydrology for North Eastern Region is proposed to be established soon at Guwahati. A two-member committee headed by Dr. Satish Chandra, Director, National Institute of Hydrology, Roorkee, has already finalised its report and the modalities for setting up of the centre are being worked out. The State Government is reported to have agreed to provide necessary land for the purpose.

Vacuum Scienc Scholarshi

The International Union fo Vacuum Science Technique an Applications will award th IUVSTA Welch Scholarship 198 to a scholar who wishes to contribute to the study of vacuum science techniques or their application in any field. Details can be had from Dr. Narain Mahishi Secretary, Indian Institute of Science Alumni Association, Bangalore.

IIT in Assam

The Government of India have decided to set up an Indian Institute of Technology (IIT) at Assam on the pattern of other IITs in the country. This was announced by the Union Minister for Human Resource Development, Shri P. V. Narasimha Rao recently in Rajya Sabha.

Jadavpur Varsity to Introduce Sociology Centre

The University Grants Commission is reported to have permitted the Jadavpur University to introduce Sociology in its undergraduate and postgraduate courses from the next academic session. This was revealed by Dr. Sankar Sen, Vice-Chancellor of the University, in Calcutta recently.

News from Agril. Varsities

BAU Adopts Tribal Hamlets

As part of its golden jubilee celebrations the Birsa Agricultural University (BAU) has adopted five tribal hamlets in Ranchi district for ensuring co-ordinated development under the lab-to-land programme launched by the ICAR. The programme has brought under its fold about 50,000 agrarian families comprising small and marginal farmers and landless labourers to raise their socio-economic level.

According to Dr. H.R. Mishra, Dean of Veterinary Science, the programme envisaged collaboration of all the government departments, voluntary and other agencies with the university's academic activities. Scientists, students and other workers of the university would interact and work with the villagers to acquire quality rural experience by way of teaching, training, research and extension education. He said that the programme would enable the scientists to develop appropriate technologies and modes of mechanism of technology transfer for producing desired level of socio-economic impact on the villages.

Sports News

Indo-Soviet Cooperation in Sports

A protocol on the cooperation sports between India and the viet Union for 1987-1988, and a pplementary protocol for Soviet istance in the development of South Centre of the National titute of Sports at Bangalore as entre of excellence, were recently ned in Moscow, by M. Gramo, airman of the USSR State Com-ttee for Sports and Mrs. Margaret va, State Minister for Youth fairs and Sports, Woman and ild Development.

The protocol on cooperation for 87-88 is the third one in the ies of agreements in sports ned by the two countries since 83.

Speaking on the occasion Mrs. argaret Alva said that India had e benefit of the services of Soviet perts and coaches in various sciplines such as swimming, athle-s, boxing, basketball, volleyball, restling, weightlifting, archery, etc. e pointed out that teams have ken part in national and interna-onal tournaments held in both untries.

She referred to certain new evelopments in this field like ex-anges of coaches, exchanges of ams, friendly competitions, train-g of coaches, etc. She also ressed the development of the ntre of excellence in Bangalore, r which equipments worth about s. 10 crores have been given.

Talking about India's plans in orts development, she said that orts had got no instant solution hich could be produced in just one year. This required recasting of plans, training programmes, which takes some time. What we have started now will probably bear results by 1990. She said that there had been a tremendous recasting of priorities to the whole approach to sports. "We are proud that we are trying to mass base sports in our country, infrastructure right down to the state, district and smaller levels and at the same time creating centres of excellence where those having talent may be identified and given opportunities." she said.

Like Spartakiad in the USSR and other Socialist and East-European countries, she said, India too had been doing something of a similar nature which was termed as *Bharatiyam*. It would be a continuing programme in India and would be development in nature and serve as a promotional avenue for mass sports programme. Mrs. Alva expressed her gratitude to the Soviet Government for accepting Indian Government's request for deputing specialists for the skills in organising mass sports performance. She told that the first performance of *Bharatiyam* will be held in November this year in Kerala and a big programme had been planned for the Nehru centenary.

Third University Contingent for Festival of India

The third contingent of 42 university students and officials from 7 universities will leave for Tashkent on September 1, 1987 for participation in the Festival of India in USSR. Tashkent is the venue of the third main inaugural function to take place on September 4, 1987. The Festival commemorates the 40th anniversary of Indian Independence and the 70th anniversary of the Great Socialist Revolution.

After participation in the inaugural ceremony on September 4 and visit to farms, industrial enterprises, schools and colleges on September 5, the Youth will disperse in three batches to three different regions of USSR from 6th September to 17th September.

Following university participants are included in this contingent.

Badhai Folk Dance (Dr. Hari Singh Gour Vishwavidyalaya, Sagar): Usha Raj, Anupma Dube, Deep Shikha Tamrakar, Sapna Modi, Ajay Gupta, Sudhir Tiwari, Madan Nanda, Deepa Pande, Krishan Lal, Sanjay Jadia, Moorat Singh, Chandra Kumar, Devi Prasad, and Shri V.N. Pathak (official).

Chowlia Folk Dance (University of Bombay) : Samir Tanna, Ajay Kapasi, Asit Kerawala, Aroop Sharma, Babita Rochlani, Sujata Ghatalia, Depalee Doshee, Naisha Desai, Bhavdeep Jaipurwale, Husain Kharva and Indumati Lele, and Prof. (Mrs.) Leena Vanmai.

Group Song (Dayal Bagh Educational Institute, Agra) : Mamta Sharma, Rita Swami, Neeti Mishra, Mrityunjaya Mathur, Chota Madan Markan, Sukhdev Roy, K.K. Upadhayay, Ravi Bhatnagar ; Nandani Kumar and Dr. S.B. Sharma (Official).

Santoor Recital (University of Jodhpur) : Nikhil S. Bidwalkar and Yashwant Sharma.

Seminar : Janaki Vishwanath (Tata Institute of Social Sciences. Bombay), Renu Gonela (Andhra University), and Shipra Shiromeny (Agra University)

News from Abroad

The Karmarkar Algorithm

An algorithm, called Karmarkar algorithm invented by Dr. Narendra K Karmarkar, an Indian Scientist in the United States, has been found extremely successful in solving practical communications, business and network planning problems within no time.

Dr. Lakshman P Sinha, supervisor of the overseas network planning group of the Bell Laboratories, who worked closely with Dr. Karmakar, said that this algorithm could be successfully applied for properly scheduling the Indian Railways and studying the problems of Indian telecommunication network. Algorithm which are plans that guide computers through their given chores, are used to solve linear programming problems.

He said the Karmarkar algorithm could solve a ten-year planning problem within four minutes. These are complex mathematical procedures that "steer" a computer's operations through the geometry of a large problem involving thousands of constraints and variables.

A linear programming algorithm called simplex method developed in 1947, has been in use so far to enable machines to handle complex problems. While the simplex method performed 10,000 arithmatic operations for one iteration-step-the Karmarkar algorithm could involve one lakh operations for one step.

Dr. Lakshman said the B Laboratories used the Karmark algorithm to solve the compl problem of the pacific basin telecor munication network. The proble was solved within minutes. Futu planning sessions, by using the Ka markar algorithim, might be able engage in real time, inter-acti planning, he said. This could dr matically speed up the pace planning.

Dr. Karmarkar, a graduate fro the Indian Institute of Technolog Bombay, is a member of the techn cal staff in the mathematical founda tion of the computing departme at Bell Laboratories, Murray Hil New Jersey.

We Congratulate . . .

Dr. Rajpal S. Sirohi, Professor and Head, Engineering Design Centre, Indian Institute of Technology, Madras who has been elected Fellow of the Optical Society of America in recognition of his distinguished service in the advancement of optics.

THE TEACHERS' STRIKE

(*Continued from page 1*)

Then there is the grouse about the 7 point promotion scheme ; the Education Ministry does not appear to have put its case properly with reference to the allegation that IAS does not have any such gradation. It is well-known that an IAS officer joins in the junior scale ; then he secures the senior scale, the selection grade, the super time scale, and then the grade of the Additional Secretary and Secretary. Every year, he is assessed critically and is promoted to the next higher grade if found suitable. Nothing prevents those who wish to go in for the IAS to appear at the open competition, which also has two steps ; the preliminary examination and the final. The preliminary examination may be equated with the NTS scheme.

The same is true of military service. Here, the annual assessment is equally stiff. If the Educational Service has to acquire the same efficiency and image, there is no escape from continuous assessment.

In the aforesaid services, the assessment is made not only by peer groups but also by politicians, while in education, the assessment is made wholly by peer groups (national & international) and scholarship cannot remain long supressed.

The third grouse is about in-service training. Suffice it to say, that this too is an integral part of the development and orientation of the cadres of the IAS as well as the armed forces. Knowledge is increasing at an incredible pace every year ; and the teachers shall lose nothing but gain a lot if they are asked to take in-service refresher and orientation courses periodically and share experience and thoughts in a relaxed and friendly atmosphere.

Gunnar Myrdal ascribed India's low rate of progress to her being a 'soft' state, not in the sense that it was not a totalitarian state but in the sense that people performed their duties perfunctorily and at an easy pace. So if we mean to solve the problems facing millions of our less fortunate compatriots, led the teacher show the path of duty and attend to the tasks of scholarship, research & teaching for it is through scholarship, *tapas* and *yoga* that we shall redeem our constitutional pledge.

Engaged as the nation is in a war against poverty illiteracy, insanitation, unemployment and now drought and floods, every minute counts and already we have lost millions of man-hours at the universities and colleges, which are the production centres of vital human resource for the country.

EVIEW ARTICLE

Funding of State Universities

Some Crucial Issues

K. K. Balachander*

Mridula, State Funding of Universities—A Study of Maintenance Grants to Universities, Association of Indian Universities, New Delhi, 1985, pp. xiii+187, Rs. 50.00

Pursuing simultaneously the three goals quantity, uality and quality have introduced many perplexities the Indian higher education system which have fected its size, character and means of finance. The licy-makers, it appears, had not examined, suffiently in advance, the implications of expansion, pecially on the financial front. The devising of propriate methods of financing higher education hat takes into account the social objectives as well qualitative upgradation) was brushed aside for long a 'second order' problem in the discussions on igher education. It is heartening to see that educaonal finance, as a subject of enquiry, has been eceiving in the recent past keen interest among cademics, and a number of studies have come out ealing with this topic. There have been too many ritiques, rather radical, arising mainly from the disipline of Economics, stressing the profound financial risis in education, particularly higher education, and ecommending a review of the existing patterns and roducers of central and state government assistance or higher educational development. (As Mark Blaug ightly put it, perhaps the economists can throw more nsights on this important issue which the nonconomists are likely to miss ! In this sense, therefore, the former still have a contribution to make to ducational planning in less-developed countries). Considerable amount of research in this area has also been done, and is being done, in some universities and ther reputed institutions, such as the Association of ndian Universities (AIU), the National Institute of Educational Planning and Administration (NIEPA), and the Indian Institute of Education. The monumental Education Commission Reports (1948-49 handed y Dr. Radhakrishan and of 1964-66 headed by Dr. D.S. Kothari) had studied the problem of higher educational finances in detail and urged the need for many reforms in the system. The latter had rightly emphasised the need for ironing out the *ad hocism* in financing university education and putting the institutions on sound footing under clearly laid down norms. At various conferences, workshops, seminars, etc. organised in recent years by the University Grants Commission (UGC), the AIU and some universities/research institutions, the problems relating to funding of higher education have been discussed threadbare. The proceedings (and the conclusions arrived at) of these academic meets do make one believe that *status quo* is not what is desired with regard to the present pattern of financing of higher education. The shortcomings of the existing system have been identified and the directions of change indicated. However, most of the studies conducted on this theme have been found to be analysing the pattern of financing for the system as a whole. There are problems of overall financing and also of relating to financing the different constituents of higher education, e.g. universities (central and state), colleges, IITs, Institutions of National Importance, etc., and this needs to be thoroughly investigated.

The book **State Funding of Universities** authored by Mridula makes a sincere attempt to fill the above gap. It is an indepth study of the formulae, processes, adequacy, efficiency, flexibility and equity aspects of the system of block/maintenance grant-in-aid to state universities. The study is based on the information/data provided by 57 universities and 9 state governments on the mechanism of financing (i.e. the system of grants-in-aid) for the years 1968-69 to 1979-80.

The author gives a good account of the patterns and procedures of financing state universities in India and examines in detail the implications of the existing grants-in-aid system to the financial conditions (and autonomy) of these universities. The issues raised by her are very important and some of the conclusions arrived at are worth taking seriously. The data

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have been excellently sifted, and presented in an intelligent manner. In his Foreword to the book, Dr. Jagdish Narain emphasises broadly the author's three main conclusions : (i) The (state) university system has undergone a considerable change both in terms of enrolment-size and subject-specialisation, but the basis of funding of these institutions has not kept pace with this dynamics—in short, the existing system has outlived its utility on all counts. (ii) The pressure of social demand for university education and the cumbersome nature of the present mechanism of financing have been pulling the system in opposite directions. And (iii) there is an urgent need for reformulating the system of financing to these universities. In the Introduction, the author has skilfully emphasised the crucial importance of the problem in the context of development. The book is arranged into seven chapters (including Introduction), each of them bearing some thematic unity. Although each chapter provides useful information and analysis, the book's main strength lies in Chapters IV, V and VI. In Chapter IV, the problems of financing are discussed from the points of view of both the givers, i.e. the state governments, and the receivers, i.e. the state universities.

II

What should be the principle of grants-in-aid from state governments to universities ? What are the shortcomings of the present system of grants-in-aid and how can they be overcome ? Are the grants satisfactory from the points of view of (a) resource-adequacy, (b) regulatory in resource-flow; and (c) financial flexibility/autonomy in resource-use ? What constant factors should enter into the formulae for computing grants ? How often should they be assessed and what should be the procedure of assessment ? A carefully planned grants-in-aid system will surely go a long way in helping the higher educational institutions to carry out their obligations to society. It should be so framed that the following requirements are satisfied : (a) It should help in maintaining an overall planned, coordinated policy for higher educational development. (b) It should improve equalisation of higher educational opportunity which is considered as one of the 'external' effects or social benefits made possible by public expenditure on higher education. Also equality of opportunity will not be meaningful if there are unequal facilities for higher education in different states/ regions in the country. Access to higher education should be enjoyed by prospective participants in all parts of the country equally. It may therefore be necessary to have a differential system of financial assistance to
prevent the occurrence of wider disparities with
gard to provision of higher educational services
maintenance of standards between advanced
backward states/regions. (c) It should enable
institutions concerned to have a stable income. F
quent fluctuations (*ad hocism*) of grants will ca
uncertainty in future planning. (d) The amount
grant should be adequate enough. Since the gove
ment now provides grants according to a sct formul
rising costs may *not* automatically get reflected in
provision of grants. The grants-in-aid policy shou
therefore be more flexible with provisions for perio
review so as to keep pace with normal growth in
penditure. Such a step would end the uncertainti
if any, and enable the institutions to devote the
selves to the pursuit of their main tasks. It wou
also be desirable for an institution to be assured
advance that if it is asked to take more students, i.
beyond the optimum size, and/or required to exte
its affiliating jurisdiction (in the case of the unive
sity), it could count on increased income. This
necessary as the present fee incomes are not adequa
and private philanthropy is fast drying up. (v)
should be clear in its specifications. The nature an
scope of 'admissible' and 'inadmissible' items of ex
penditure should not be a 'mystery'. It shoul
clearly define the items of expenditure eligible fo
government grants, so that the institutions are left i
no doubt in regard to the admission of these items fo
grant. This will also avoid divergent interpretation
by officials. All vital and unavoidable items which
are essential in the larger interests of the institutions
and keep them at a reasonable level of efficiency,
should be included in what constitutes the 'approved
expenditure'. The conditions approved by the government should be liberal in such cases. (vi) All *committed* expenditures must be continued on a permanent basis. This may require proper coordination
between the different grant-giving authorities. (vii) It
should encourage diversity, experimentation and innovation. Institutions which show dynamism in this
regard must be encouraged by special incentive grants.
(viii) it should encourage the institutions to introduce
economy in expenditure. It should have some inbuilt incentives for cutting costs and using resources
efficiently. (ix) It should not be used as a lever to
interfere with the normal functioning of institutions;
it should not lead to such a situation that the institution may have to give up its autonomy in return for
more state funds. (x) It should be such that it
clearly specifies the financial responsibility of each
partner—the government, the universities and students/parents. (xi) It should stimulate each institution to mobilize private (non-governmental) resources

ded for its proper development. If the institu- succeeds in this effort, it should not mean that government can absolve itself of its responsibility.) It should promote academic excellence in insti- ons.

The book provides valuable insight into, if not some of the above issues. Two important points hlighted in the study are the irregular flow of nts and their inadequacy. The state governments not follow any systematic and proper policy in allocation of funds to various universities. As author states, "it is neither consistent nor based any economic or educational indicators." In fact, re is a lack of appreciation of the real role of se institutions. The tendency is to look upon vernment allocation to these institutions as just penditures' rather than as 'investment'. As a nsequence, the emphasis appears to be more on gulation' than on 'development'. While the growth the flow of government funds is under control, the owth in enrolment is not. Enrolments are guided different sets of considerations which do not cessarily govern the flow of funds. There is no arantee that the universities, particularly the eady big ones, can count on increased income if ey are asked (or rather pressurised) to take more idents, and/or their affiliating jurisdiction is exten- d. Also the financial administration in the univer- ies is gradually geared towards the rigid (and personal) practices and requirements of the state vernments. The fact that this affects the hopes and pirations of thousands of students and a good umber of teachers is totally forgotton in the process. any educationists who are sincere about the well- eing of the system are finding it difficult to control e non-academic pressures that arise due to fiscal adequacy. They view this crisis with considerable ismay, and compare it to the situation of the earlier lden age when funds were sufficient and institu- onal autonomy was assured in planning their bud- ets, and the government gave only broad guidelines. urther, much depends on the bargaining power of e Vice-Chancellor with the state government. And the Vice-Chancellor happens to be a person belon- ing to the teaching profession with little or no lministrative experience, when he/she goes to argue ith the officials in the state department of education r finance), it is quite likely to be an encounter etween people speaking two different languages with o interpreter present. "Indeed, on this account", as oombs rightly observes, "it is important for educa- onal leaders to master not only their own field but e language and techniques of economists as well, in order to be better armed for the defence of their own proposals in the annual 'battle of the budget' ! Good rhetoric is no substitute for facts and analysis in winning these battles".

All these attitudes have an adverse effect, not only on the implementation of academic programmes, but on the quality of plans themselves. The consequences of the lack of a clear-cut and imaginative approach to the funding of universities are indeed very serious. There appears to be no disputing against the above background of the urgent need for a thorough change of the present framework for the flow of grants to state universities.

III

The author has stated that it was difficult to give a comparative picture of the financial positions of both 'state' and 'central' universities as of the latter, only 2 responded in giving full information (Chapter I). One wonders, however, whether any study of financing of universities would be complete without reference to central universities. There is a growing feeling that a strong pattern of uneven distribution of grants has prevailed as between these two types of universities. One would have also wished that the data relating to **new** and **old** (large) universities (established before 1900) had been subjected to further critical scrutiny and their ramifications brought out. The revenues of many universities belonging to the latter group have not increased much over the years owing to financial constraints resulting from inadequacy of government aid and the declining student contributions. Their chronic financial ailment is further aggravated by the new 'salary payment scheme' introduced in some States. Many of them may reach the point of bankruptcy in the not too distant future if their deficits continue to grow as they have been in recent times. Considering the vastness of their affiliating jurisdiction, the pressure of student numbers, the multiplication of courses and programmes (and examinations) and the increasing cost in conducting them, the larger number of teaching-cum-research departments for post graduate studies under them and the consequent increase in strength of teaching and administrative staff (and their becoming increasingly aware of their identity and role, and emerging as a strong force), etc., many old, big and reputed state universities deserve a better understanding from the state government (and the UGC) with regard to their maintenance and development grants.

The central universities which are receiving both maintenance and development grants from one single source, i.e. the UGC, are in a different position altogether. Though these universities (and their colleges) form a small part of the university system, both institutionwise and enrolmentwise, they are the beneficiaries of liberal grants. Why the reluctance to treat the state universities as an integral part of the national university system ? Instead of looking upon the maintenance of these universities as just the business of the states concerned, the UGC could extend more help, either directly or indirectly, to alleviate some of the pressing and special problems faced by them. As a first step, the UGC should undertake a review of the working (and financing) of the state universities on the same lines as was done in the case of central universities recently.

IV

The study has dissected the problems faced by the state universities quite well, but in its attempt to draw policy conclusions at the end, it is rather weak. After finishing the book, therefore, one gets a feeling that many questions still remain unanswered. Some of them need special mention.

1. In many countries with federal set-up and with a strong tradition of local control on university education, even in the absence of any constitutional obligations for that purpose, there is a growing realisation of the need for a substantial increase in Federal (Central) assistance. In India too, the Centre (through the UGC) could be associated more effectively in advising the state governments on enrolment policy, determining the question of maintenance grants to universities, and even on fixation of fee rates. The Education Commission (1964-66) had observed that an independent body like the UGC should periodically assess the financial needs of state universities, say for a period of 3-5 years, and this should form the basis for providing maintenance grants to them. Such a step, it was felt, would end the uncertainties, and enable these institutions to devote themselves fully to the pursuit of their main goals. The Report of the Committee on Governance of Universities and Colleges (1971) too had stressed the need for a closer collaboration between the government and the universities/colleges, and each respecting the complementary role of the other. It had further recommended that the UGC should be involved effectively in advising the state governments in determining the quantum of maintenance grants to these institutions. The Conference of Vice-Chancellors had recommended in 1975 that the Governmen of India should place at the disposal of the UG sufficient funds [to enable the Commission to pa maintenance grants for specified activities of stat universities. It had also pleaded for mor funds for their Plan development programmes The Commission, if armed with more funds an powers, could extend maintenance grants to stat universities on a selective basis for longer periods say 10-15 years, or even on a permanent basis Besides, each state, at present, is having its ow grants-in-aid code with different approaches (and it inherent drawbacks). The UGC could bring abou some semblance of uniformity in these matters now that education has been made a concurrent subject. Just as the UGC had framed a Model Act for universities in India a few years ago, a common or model grants-in-aid code could be framed for all universities.

2. While the question of finance should bring state universities into closer relation with the state government, the experience is that it is leading to tensions between the two. The problem is further complicatied by the fact that university education is funded (and overseered) by more than one agency with diverse and conflicting objectives—often with objectives and no powers, and sometimes with powers but no objectives. The sources of funding to state universities (and their colleges) are found in a loose series of inter-relationships among the Planning Commission, the Union Ministry of Education and the UGC at the Centre, the Ministry of Education (and Finance) in the States and over 140 universities (and 5500 colleges). The patterns and procedures of grants-in-aid differ from one agency to the other, and the rationale behind them is not explicitly brought out. There has been a lot of overlapping too in their functions. In an ideal university system, the different fund-giving agencies should have a close relationship to one another so that it will be easy to introduce changes, if needed, in an orderly and smooth basis, and bring about the desired results. Lack of it in India has given rise to a number of problems. It is necessary to have a state level body which could act as a buffer, or a channel of communication between the state government and the UGC, and between them and the state universities. This body should assess periodically the financial needs of the universities in the state, determine the quantum of grants to them and ensure timely flow of funds. A representative each from the state education ministry and the UGC could be included in the proposed body This will help smooth and effective implementation

the state level of policies framed at the national vel with the consent and cooperation of the state vernment concerned. This can also ensure that the velopment programmes already initiated during the rlier Plans in the universities are continued in full future. The recent document on National Policy on ducation (1986) has stated that "state level planning nd coordination of higher education will be done rough Councils of Higher Education. The UGC nd these Councils will develop coordinative methods o keep a watch on standards." Perhaps the Council he Government of India plans to set up could perorm the above functions too, and its terms of eference be widened accordingly.

3. At present there is no specific provision for ducation to the states in the context of the Finance Commission Awards even though in the process of eassessment of state non-Plan needs, the Finance Commission does consider the individual sectors' inancial needs and the committed expenditure on schemes initiated in the previous plan under the Plan budget. However, the allocation of resources is done by Commission in *bulk* for all the activities of the state government, and not earmarked sector-wise. Under this arrangement, there is a likelihood of the funds meant for education (and higher education) getting diverted to other sectors in the non-Plan budget. Naturally, the programmes initiated by the UGC in the preceding Plan may suffer as the state governments may not make a provision for continuation of such programmes in the non-Plan budget. In actual practice, many state governments (and that includes some economically advanced ones too) have been dodging their responsibility of meeting expenditures incurred under the earlier Plan. For example, the Centres of Advanced Study set up in many state universities, which are supposed to serve as pace setters in their respective fields and achieve 'peaks of excellence', can be continued on a regular basis only if the state governments agree to finance them permanently on a cent-per-cent basis after the Commission's assistance ceases. At the same time, such Centres located in central universities will not experience this kind of uncertainty as their financial needs are well looked after by the UGC on a regular basis. Although some state governments have adopted these Centres after considerable persuasion, the grants made are found to be inadequate causing in the process undue strains on the resources of the state universities. Sometimes only the posts—and that too teaching posts—approved earlier by the Commission (i.e. the salary part) for the Centres are considered for assistance by the state governments; for the non-salary part, which has also high academic value, and which is an integral part of the whole programme, grant is denied. The universities find it diffiult to continue with these programmes as their own funds are very meagre. Naturally such activities face discontinuation once Commission's assistance stops. In view of this, there has to be some system of monitoring as to whether the stipulations of the Finance Commission are adhered to or not by the State Governments. Also considering the fact that the states are in different stages of development of higher education, and that their efforts and abilities vary, the Commission could more explicitly consider the requirements of this essential service in as much detail as possible for the different states in India while giving their awards. This will enable the economically weakers states to provide the benefits of higher education to their people comparable to those of other economically advanced states.

4. A study of the finances of some of the leading universities will reveal that the proportion of their internal resources to total income has been going down. Most of the universities have done nothing on their own to augment their resources ; they live in the hope that ultimately the government will come to their rescue, and this does not just happen. The universities should make sincere efforts to establish a closer rapport with the community, and not live in an environment of exclusiveness. They have to see that the community is made aware of the constraints, pressures and challenges being faced by them. Also many parents/students have no clear idea of the cost involved in providing courses in universities. If they are provided with adequate information, there will be a sea change in the debate on the question of raising fee rates and a mutually acceptable solution to the problem can be found. It can be resolved satisfactorily only by the total involvement of the faculty, students and their guardians/parents.

5. The state governments cannot be held wholly responsible for the present financial ills that infest the universities. Perhaps there is an element of truth in the statements made by the State Education Ministry officials that there is a lack of financial discipline in universities, and that their financial management is very poor (Chapter IV). The universities could make better efforts to get most out of the resources by optimum and efficient use, and avoid all institutional extravaganza and cosy facilities. They have to find out which of their operations are absorbing large part of the resources and which ones

have considerable potential for economies as a result of increased efficiency. While the state governments (and the UGC) should become more alive to the claims of the universities on public revenues, the latter too, on their part, could become more cost conscious and priority minded. Some general criteria for effective management and budgeting of universities have to be developed. While preparing the annual budgets, very few universities relate it to any overall plan designed to move them towards their objectives. Very little research has been conducted on these aspects—the field remains mostly unexplored. So far the pressure has been on quantitative expansion, not management efficiency. As the system has grown bigger, so also its complexities and problems. There is a feeling among the academics that the vast administrative machinery in universities, particularly in large ones, has become very slow, and is getting more absorbed with routine administration that academic matters. Rules are used not as an aid but as road blocks to real academic activities. Some of the reforms suggested above may need little monetary investment; they may require only more human effort and ingenuity. Also the universities could aim at a certain degree of involvement on the part of academics with senior responsibility in university administration. Unless the community is convinced that the funds provided are being utilised in the best possible manner, and the university affairs are being conducted in an integrated, meaningful and fair manner, it will not volunteer with help. Some amount of self introspection is necessary on the part of those engaged in the university system.

V

A well-conceived policy of development of university education is lacking under the present system of state government assistance to their universities (and to colleges). Over the years, a system almost totally dependent on the government has been created and the consequences have to be faced. The state (and central) government cannot now eschew their responsibilities. There is no justification for denying adequate funds to institutions that have already been *permitted* to come into existence. They should not be left in the lurch languishing for funds. As far as future expansion is concerned, the government can limit it to the level of resources/facilities available in the country; in fact, the New Education Policy document of the Government of India has stated that, in future, the emphasis would be on consolidation and diversification of existing institutions of higher education and that new institutions would be set up only where absolutely necessary. This policy should prevent the unsatisfactory and alarming situation in the higher education sector resulting from government funds getting spread thinly over too many points, deteriorating physical facilities and erosion in academic standards. If the state universities are relieved of their immediate as well as long-term financial woes, they can devote their undivided attention to 'academic excellence' which the society expects of them.

In this rather long review, an attempt has been made to bring out the salient aspects of the book *State Funding of Universities*. The preceding paragraphs should not in any way detract from the overall usefulness of the book. The book is an important contribution towards a better understanding of the various facets of funding of state universities in India. It deserves a careful reading by policy-makers, university authorities and scholars in the field. ☐

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CALENDAR OF EVENTS

roposed Dates f the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
ptember 10-15, 1987	Seminar on Contemporary Indian English Poetry.	To apprise the participants of the emerging trends in Contemporary Indian English Poetry.	Govt. P.G. College, Dharamsala (H.P.)	Dr. Atma Ram, Principal, Govt. P.G. College, Dharamsala-176 215 (H.P.)
ptember 18-21, 1987	National Seminar on Energy Education	To discuss various aspects of energy education—meaning and scope, resources, institutionalisation, teacher preparation, curriculum development, and role of mass media.	Department of Education, Rohilkhand University	Dr. Beena Shah, Organising Secretary, NASEEZ, Department of Education, Rohilkhand University, Bareilly-243 001, U.P.
pt. 21 - Oct. 4, 1987	Training Course in Research Methodology in Geography	To expose the participants to research methods in Geography and quantitative and cartographic techniques employed in Geographical research	Department of Earth Sciences, Manipur University, Imphal.	Dr. R.P. Singh, Dpartment of Earth Sciences, Manipur University, Imphal.
ctober 5-9, 1987	Short-term Course on Advanced Image Processing for Remote Sensing.	To appraise the scientists/engineers, working in the area of Image Processing and its Applications to Remote Sensing, regarding techniques, developments and future trends in the field of Image Processing.	Indian Space Research Organisation (ISRO) in collaboration with IIT, Bombay.	Dr. T.V. Pavate, Chief Project Engineer [CSRE], Principal Programme Coordinator (Training), ISRO-IIT (Bombay) Space Technology Cell, CSRE Building, Indian Institute of Technology, Powai, Bombay, 400 076.
ovember 16-20, 1987	Seventh National Symposium on Radiation Physics	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
ovember 25-27, 1987	**International Conference on Mud Architecture**	**To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.**	**Ministry of Urban Development, Govt. of India, in collaboraton with the Govt. of Kerala, HUDCO and the All India Housing Development Association.**	**Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & & Urban Development Corporation, K.G. Road, Bangalore - 560 009.**
ovember 26-28, 1987	**International Seminar on Instrumental Methods of Electro-Analytical Techniques.**	**To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electroanalysis.**	**Indian Institute of Science, Bangalore.**	**Prof. M.H. Dhananjaya, Principal and Chairman of the Organising Committee, S.J. College of Engg., Mysore.**
December 18-19, 1987	National Conference on Role of Universities in Implementation of New Education Policy.	The Conference will focus on Management of Higher Education, Improvement in Efficiency and New Strategies in Higher Education vis-a-vis New Education Policy	Association of Indian Universities in collaboration with Osmania University, Hyderabad.	Dr. V. Natarajan, Project Director (Exams) Association of Indian Universities, 16, Kotla Marg, New Delhi-110002

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One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Physics

1. Abraham, Susan, *Studies on directional solidification of alloys*. Kerala. Dr. V.K. Vaidyan, Dr. K.G. Satyanarayana and Dr. B.C. Pai.

2. Bharti, Rachana. *Correlation functions in condensed systems*. Delhi. Prof. S.P. Tewari.

3. Das, Prantosh Kumar. *Laser-plasma interaction*. Delhi. Dr. M.P. Srivastava.

4. Joshi Hira. *Electron correlation in condensed systems*. Delhi. Prof. S.P. Tewari.

5. Pahwa, Anita. *Body aura and spectroscopic studies on macromolecular systems*. Delhi. Dr. Madan Mohan Bajaj

6. Prasad Saurabh. *Investigations on some aspects of nuclear structure through quark model*. Delhi. Dr. V.S. Bhasin.

7. Sharma Purnima. *Studies on thin films using surface acoustical waves and electrical techniques*. Delhi. Prof. Abhay Man Singh.

8. Singh Shashi Shankar. *Studies of low latitude ionospheric F region*. Delhi. Prof. J. N. Tandon and Dr. B. C. N. Rao.

9. Srivastava, Rama. *Electrical and acoustical properties of oxide films*. Delhi. Prof. A. Mansingh.

10. Ushakumari, L. *Studies on directional solidification of alloys*. Kerala. Dr. V.K. Vaidyan, Dr. K.G. Satyanarayana and Dr. B.C. Pai.

Chemistry

1. Agrawal, Poonam. *Co-ordination compounds of 2-substituted thiazoles and related ligands*. Banasthali. Dr. A.I.P. Sinha.

2. Amir Aminifar. *Kinetics and mechanism of Industrially important reactions of substituted phenols with ketones and aldehydes*. Delhi. Dr. H.C. Malhotra.

3. Harpal Kaur. *Studies of alkali & alkaline earth cation complexes*. Delhi. Dr. Ramesh Chandra.

4. Jha, Sanjay Kumar. *Coordination chemistry*. Delhi. Dr. S.K. Sindhwani.

5. Jose, T.M. *Correlation between the nature of the polymer matrix and reactivity of attached functional groups in polymeric reagents*. Gandhiji. Dr. V.N. Rajasekharan Pillai.

6. Karakkattu, John K.J. *Synthetic and mechanistic studies using polymeric oxidising and brominating reagents*. Gandhiji. Dr. Rajasekharan Pillai.

7. Manju Bala. *Complex compounds of Schiff bases derived from polyheterocyclic amines*. Banasthali. Dr. A.I.P. Sinha.

8. Padmalata, M. *Studies on materials of importance & a study of solar energy storage in chemical compounds*. Delhi. Prof. S. Lahiry.

9. Puntambekar, U.S. *Transformation of plants*. Shivaji. Dr. P.K. Ranjekar.

10. Ramachandran, P.R. *Synthethic and mechanistic studies using crosslinked polymeric active esters*. Gandhiji. Dr. V.N. Rajasekharan Pillai.

11. Sawaikar, S.D. *Synthesis of biologically active compounds-β-lactams*. Shivaji. Dr. N.R. Ayyangar.

12. Sreekumar K. *Polymeric analogues of t-butyl hypothalites as solid phase reagents*. Gandhiji. Dr. V.N. Rajasekharan Pillai.

13. Sudarsana Kumar, M.R. *Metal complexes with oxygen donor ligands*. Kerala. Dr. C.G. Ramachandran Nair.

14. Sukumaran Nair, K.P. *Effect of topographical nature he polymer matrix in polymer supported solid phase acyla- ıs.* Gandhiji. Dr. V.N. Rajasekharan Pillai.

15. Zacharias, Jose. *Polymer supported phase transfer alysis using immobilised poly ethylene glycol derivatives.* ndhiji. Dr. V.N. Rajasekharan Pillai.

th Sciences

1. Banerjee, Amit. *Micropalaeontology.* Delhi. Dr. bha Kalia.

2. Banerjee, Indrajit. *Geochemistry.* Delhi. Prof. G. S. onwal.

3. Bhatnagar, Anurag Sahal. *Geology and geochemistry of oterozoic carbonates.* Delhi. Dr. D.M. Banerjee.

4. Bhattacharya, Debashis. *Aspects of metallogenesis in Togham igneous complex, Haryana.* Delhi. Dr. M. Deb.

5. Jagirdar, Madan. *Sedimentology and applied geology.* lhi. Dr. V. Jhingran.

6. Mishra, Shobhita. *Petrological investigations in the Chor ea in Western Himalaya.* Delhi. P.K. Verma.

7. Panda, Ajit Kumar. *Felsic magmatisation and minerali- ion in South Central Rajasthan.* Delhi. Dr. Mihar Deb.

8. Pant Kamal. *Geology of a part of Garhwal-Kumaun imalaya.* Delhi. Prof. P.S. Saklani.

9. Salim, M.B. *Integrated environmental capacity assess- nt for land-use development and conservation : A case study Aralampuzha-Bavalipuzha river basin, North Kerala.* Kerala. . R.S. Iyer.

gineering and Technology

1. Goudarzi, Daryoush Amir Sardari. *Some studies on MIG lding of precipitation hardening on aluminium & zinc alloy.* lhi. Prof. Rajnish Prakash and Dr. S. Pandey.

2. Isacc, Jayakumari. *Crystal growth and related problems.* ndhiji. Dr. M.A. Ittyachan.

3. Varzghani ; Benzarjomani-Faraji. *Alternative fuels for ternal combustion engines.* Delhi. Dr. S.P. Reddy and Dr. S. Susarlu.

4. Varghese, George. *Growth and study of europium mpound crystals.* Gandhiji. Dr. M.A. Ittyachan.

BIOLOGICAL SCIENCES

arine Biology

1. Miranda, P. Ignatius. *Parasites and diseases of shell hes of the South-West Coast of India.* Kerala. Dr. S. adhakrishnan.

2. Radhakrishnan, C. *Studies on the biology and fishery an elasmobranch.* Kerala. Dr. C.M. Aravindan.

icrobiology

1. Banarsi Dass. *An experimental approach to develop a ethod for estimation of relative potency of Russell's viper anti- nom serum.* H.P. Dr. S.N. Saxena.

2. Rajesh Kumar. *Development of an improved pertursis ccine.* H.P. Dr. S.N. Saxena.

io-Chemistry

1. Abraham Rita. *Effect of dietary factors and pathologi- l conditions on the metabolism of very low density lipopro- ns.* Kerala. Dr. P.A. Kurup and Dr. P.R. Sudhakaran.

2. Deepa Rani, K.R. *Effect of exposure of the mother to cigarette smoke on the metabolism of lipids and macromolecular components in the young ones using experimental animals.* Kerala. Dr. P.L. Viiayammal.

3. Helen Joy, B.H. *Effect of feeding atherogenic diet to the mother on the metabolism of lipids and macromolecular components in the young ones using using experimental animals.* Kerala. Dr. P.L. Vijayammal-

4. Jaya, G.S. *Metabolism of lipids and glycoconiugates in alcohol treated rats.* Kerala. Dr. Venugopal P. Menon.

5. Kuriakose, Rosh V, *Nutritional evaluation of the drum stick pods, Moringa oleifera a favourite food item of Indian vegetarians.* Kerala. Dr. K.T. Augusti.

6. Prabhakaran, Shakuntala. *Biochemical changes in pesticide toxicity in rats.* Kerala. Dr. K. Saraswathi Devi.

7. Sheela, C.G. *Biochemical studies on the effects of S-allyl cysteine sulfoxide isolated from garlic, Allium sativum Linn* Kerala. Dr. K.T. Augusti.

8. Suresh Kumar, J.S. *Metabolism of lipids and glycoconjugates in myocardial infarction associated with diabetes.* Kerala. Dr. Vanugopal P. Menon.

9. Suresh Kumar, N. *Metabolism of very low density lipoproteins in primary cultures of rat hepatocytes.* Kerala. Dr. P.A. Kurup and D. P.R. Sudhakaran.

10. Vijayalakshmy Amma, K.S. *Effect of administration of antibiotics on the metabolism of lipids and glycoconjugate.* Kerala. Dr. S. Leelamma.

Botany

1. Inderdeep Kaur. *Developmental, histochemical and ultrastructural studies on Indian seaweeds.* Delhi. Prof. M.R. Vijayaraghavan.

2. Kuriakose, Neena. *Physiological and biochemical studies of stress tolerance and secondary metabolism using tissue and organ culture techniques.* Delhi. Dr. P.S. Ganapathy.

3. Kurlapkar, D.D. *Studies on the mangrove ecosystems of Western Maharashtra.* Shivaji. Dr. (Smt.) L.J. Bhosale.

4. Negi, Sushmita. *Reproductive biology of flowering plants.* Delhi. Dr. R.N. Kapil and A.K. Bhatnagar.

5. Singh, Inder Jit. *Ecological responses of some plant species with emphasis on nutrient cycling and allelopathy.* Delhi. Dr. K.M.M. Dakshini.

Zoology

1. Inamdar, Shakera Amir. *Biosystematics studies in braconid parasitoids of some economic importance crop pests in Western Maharashtra.* Shivaji. Dr. T.V. Sathe.

2. Ingawale, D.M. *Studies of hymenopterous parasitic complex associated with lepidopterous pests on cotton.* Shivaji. Dr. T.V. Sathe.

Medical Sciences

1. Mishra, Yogendra. *Pharmaceutical chemistry & pharmacology.* Delhi. Dr. D. Zafar and Dr. S.P. Agarwal.

2. Popli, Harvinder. *Novel drug delivery system for steroid drugs.* Delhi. Dr. S.N. Sharma.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Gauri Kumar. *Some types of affinely connected and Riemannian spaces.* Calcutta

2. Katkar, Shivram Onkar. *Models for self gravitating and magnetic stars with variable density.* Nagpur.

3. Sarkar, Manigopal. *On some information theoretical and statistical models in statistical physics.* Calcutta.

Statistics

1. Dwivedi, Sada Nand. *Some probability models for analysis of birth interval data.* BHU.

2. Suryanarayana, Jayanthi. *Stress-strength and allied reliability models.* Osmania.

Physics

1. Bhikshamaiah, G. *Microstructural parameters and Debye temperatures of Ag-Cd-Zn and Cu-Al alloys.* Osmania.

2. Dev Anand. *Inclusive production of hadrons in Kp interactions at high energies.* Jammu.

3. Ghosh, Biswanath. *Cosmic rays at sea-level (26°N, 79°E).* North Bengal.

4. Majumdar, Prakash Vasantrao. *Ray absorption spectroscopic studies of some cobalt-systems.* Nagpur.

5. Mukunthan, A. *Spectroscopic studies on polyatomic molecules.* Anna.

6. Suryanarayana, Challa. *Studies on internal conversion coefficients characterizing high multipole electro-magnetic transitions.* Andhra.

Chemistry

1. Basu, Dipankar. *Chemistry of some north east Indian plant products.* Calcutta.

2. Bhattacharyya, Saradindu. *Studies on the analytical aspects of chelating resins.* Calcutta.

3. Chakraborti, Keya. *Solvent effect on exciptex omission.* Calcutta.

4. Chaudhari, Uday Rajeswar. *Kinetic and analytical studies of oxidation of industrially important products, viz. tannic acid, cellulose derivatives and poly (vinyl alcohol) with ammonium-1-hexanitratocerate (I).* Nagpur.

5. Halesha, R. *Bi and polynuclear complexes of rhodium and iridium with nitrogen heterocycles as bridging ligands.* Bangalore.

6. Jain, Rajni. *Synthesis of naturally occurring highly oxygenated flavonoids and phytochemical studies of Tephrosia species.* Delhi.

7. Jain, Rajshree. *Chemical and antimicrobial studies of natural products.* HS Gour.

8. Kaila, Neelu. *Synthesis of some heterocyclic compounds derived from chalcones and β-diketones as potential antifungal and antibacterial agents.* Delhi.

9. Merwade, Aravind Yekanathsa. *Studies in the indole field : 3-phenylindole derivatives of pharmacological interest.* Karnatak.

10. Meshram, Harshadag Mitaram. *Organic chemistry of nitrogen and sulphur containing compounds : Synthesis of new N-glucosylated formamidinas and related compounds.* Nagpur.

11. Mukhopadhyay, Snigdha. *Organic thioligands as chelating agents in the spectrophotometric determination of platinum metals.* Calcutta.

12. Murthi, Mango. *Studies in alicyclic system.* North Bengal.

13. Patel, Mayur Bhanubhai. *Interpenetrating polymer networks from renewable resources : Castor oil.* Patel.

14. Patel, Natvarlal Khodidas. *Mechanical properties of polymers.* Patel.

15. Rajeshwar, Kukatla. *Syntheses of heterocyclic steroids.* Osmania.

16. Roop Narain. *Treatment of effluent from chemical industries.* Nagpur.

17. Samal, Prakash Chandra. *Pathways in chromic acid oxidations.* Berhampur.

18. Sharma, Digish Kumar. *Study of the electroreduction of organic compounds at different metal electrodes.* Rajasthan.

19. Shobha Rani, J. *Studies on the structural features of micelles of conventional and of functionalized surfactants.* Osmania.

20. Sinha, Shekhar Kumar. *Studies on N-arylbenzimidoyl chloride derivatives as analytical reagents.* Ravishankar.

21. Syed Yousuf Ali. *Investigations of dioxygen complexes of platinum group metal ions with EdTa and some secondary ligands in aqueous medium.* Osmania.

22. Taneja, Poonam. *Studies in the synthesis of new heterocycles including some mesoionic.* Rajasthan.

23. Uma, Kadiyala. *Studies on reducibility and dispersibility of supported nickel catalysis.* Osmania.

Earth Sciences

1. Alam, Md. Mahmood. *Geology & petrochemistry of Barakar measure coals of Jharia Coal Field.* Bihar, ISM.

2. Bejarniya, Bhawana Ram. *Stratigraphy and tectonics of the precambrian rocks of the Kabitalakhawali Roma Triangle, North of Udaipur City, Rajasthan.* Rajasthan.

3. Paramjit Singh. *Microstructure, mineralogy and geochemistry of Indian vertebrates with spacial reference to the Siwalik vertebrates assemblages from the Pinjore formation of Himachal Pradesh and Haryana.* Panjab.

4. Rameshwar Rao, D. *Geochemistry & minerology of high grade rocks in the transition zone in Dharmapuri District, Tamil Nadu, India.* Osmania.

5. Sugrive Reddy, A.G. *Studies on the alkaline complex at Podili in Prakasam District, A.P.* Osmania.

Engineering & Technology

1. Sanavullah, M.Y. *Study of interior and exterior electrostatic field problems usine finite element method.* Anna.

2. Venkateswarlu, Vellanky. *Geomechanics classification of coal measure rock vis-a-vis roof supports.* ISM.

MINISTRY OF DEFENCE

DEFENCE RESEARCH & DEVELOPMENT ORGANISATION

Challenging and Rewarding Career Opportunities in Defence Research and Development Organisation (DRDO)

Advt. No. 013/RAC/87

he DRDO undertakes research and development projects in its various labs to meet multifarious needs of Armed Forces. Excellent career opportunities offering a challenging and rewarding work experience are vailable in a wide spectrum of disciplines. Labs with updated research and development facilities are ocated in Delhi, Bangalore, Pune, Hyderabad, Dehradun, Cochin, Visakhapatnam, Balasore, Bombay, Gwalior, Jodhpur etc.

Applications from candidates with aptitude for R & D work e invited for the following posts :

Scientist 'F' (Rs. 5100-6300)—3 Posts

Item No. 1 (Aerospace Surveillance Warning and Control SWAC) Project Office, Bangalore)— 1 Post

The Scientist 'F' at ASWAC is required to provide high alibre scientific leadership for Aeronautics and Avionics riented activites for the Project Office at Bangalore. The job nvolves integration of varied work-packages of radar, comunications and associated system. The applicant must be onversant with latest development in Aeronautics and Avionics ncluding Radar/Communication) techniques. He should lso have the experience of coordinating and monitoring multiisciplinary and multipurpose developmental projects/prorammes and should be capable of ensuring man-machine and verall integration and operational exploitation of a major ystem to meet service environment. The individual should lso possess ability to interact creatively with other R&D nstitutions and user agencies in the Country and should have capacity to evolve innovative and creative solutions to problems. He should be able to inspire team efforts through his breadh of knowledge related to application of technology for Defence.

Essential Qualifications : (i) At least second class Bachelor's degree in Mechanical/Aeronautical Engineering from a recognised University or equivalent. (ii) Ten years' research or design or development experience in the areas of systems maintenance and reliability studies and airborne systems engineering, of which at least three years should have been in a responsible position dealing with R&D Projects in the above mentioned areas. **Desirable Qualifications** : Master's/Doctorate degree in Mechanical/Aeronautical Engineering.

Item No. 2 (Institute of Armament Technology, Pune)—1 Post

Essential Qualifications : (i) At least second class Bachelor's degree in Computer Engineering from a recognised University or equivalent. (ii) Ten years' research or design or development experience in the field of computer hardware and software of which at least five years should be in teaching at P.G. level in a reputed institution. **Desirable Qualifications** : (i) Master's/Doctorate degree in Computer Engineering. (ii) Candidates with interest/knowledge of CAD/AI and experience in guiding students for M.Tech/Ph.D degrees will be preferred.

Item No. 3 (Institute of Armament Technology, Pune)—1 Post

Essential Qualifications : At least second class Bachelor's degree in Electronics/Telecommunications engineering from a recognised university or equivalent. (ii) Ten years' research or design or development experience in the field of Microwave antennas and related areas of which five years should be at Post Graduate level in reputed institutes. **Desirable Qualifications** : (i) Master's/Doctorate degree in the field of Antennas or electromagnetics and publications in the connected fields. (ii) Candidates having knowledge/experience in using antenna test ranges, anechoice chambers etc. for evaluation of antenna, determination of radar cross section of models and guiding of students for M. Tech/Ph. D degrees will be preferred.

Scientist 'D' (Rs. 3700-5000)—4 Posts

Item No. 4 (Naval Physical & Oceanographic Laboratory, Cochin)—1 Post

Essential Qualifications : At least second class Bachelor's degree in Electronics/Electrical Engineering from a recognised University or equivalent. (ii) Eight years' research or design or development experience in the field of CRT-based graphic display systems and display processing techniques out of which at least four years in interactive/computer graphics hardware design employing state of the art VLSI. **Desirable Qualifications** : Master's degree in Electronics/Electrical Engineering.

Item No. 5 (Naval Physical & Oceanographic Laboratory, Cochin) — 1 Post

Essential Qualifications : At least second class Master's degree in Physics/Applied Physics or Bachelor's degree in Mechanical Engineering from a recognised University or equivalent. (ii) Eight years' research or design or development experience related to acoustic caliberation facility and testing of transducers. **Desirable Qualifications** : Doctorate degree in Physics/Applied Physics.

Item No. 6 (Institute of Armament Technology, Pune)—1 Post

Essential Qualifications : At least second class Bachelor's degree in Electronics/Telecommunication engineering from a recognised University or equivalent. (ii) Eight years' research or design or development experience in the areas of microwave antennas, design and development and their evaluation. **Desirable Qualifications** : (I) Master's degree in Electronics/Telecommunication Engineering with publications in reputed journals in the area of microwave antennas and related topics. (ii) Candidates with knowledge of Radar Cross Section studies and evaluation will be preferred.

Item No. 7 (Institute of Armament Technology, Pune)—1 Post

Essential Qualifications : (i) At least second class Bachelor's degree in Electronics or Master's degree in Physics from a recognised University or equivalent (ii) Eight years' research or design or development experience in the field of Lasers and Electro-optics of which at least three years should be teaching of Graduate/Post Graduate level students in a reputed Post Graduate Institution.

Desirable Qualifications : (i) Master's/Doctorate degree in the field of Lasers and electro-optics and publications in related areas. (ii) Candidates with experience in guiding of students for M. Tech. and Ph. D. will be preferred.

Scientist 'C' (Rs. 3000-4500)—9 Posts

Item No. 8 (Defence Laboratory, Jodhpur)—1 Post

Essential Qualifications : (i) At least second class Master's degree in Physics with specialisation in Nuclear Physics from a recognised University or equivalent. (ii) Four years' research or design or development experience in radiation safety and environmental monitoring. **Desirable Qualifications :** Doctorate degree in Nuclear Physics or Post-Graduate Diploma in Radiological Physics with experience in radiation safety.

Item No. 9 (Defence Laboratory, Jodhpur)—1 Post

Essential Qualifications : (i) At least second class Bachelor's degree in Electronics Engineering or Master's degree in Physics with specialisation in Electronics from a recognised University or equivalent. (ii) Four-year's research or design or development experience in the field of computer applications in Nuclear Instrumentation. **Desirable Qualifications :** Doctorate degree in Nuclear Physics or Nuclear Instrumentation or Master's degree in Electronics Engineering with experience in software development.

Item No. 10 (Defence Laboratory, Jodhpur)—1 Post

Essential Qualifications : (i) At least second class Bachelor's degree in Electronics or Computer Engineering from a recognised University or equivalent. (ii) Four years' research or design or development experience in the field of Micro-processors and computer electronics or computer software development. **Desirable Qualifications :** Master's degree in Electronics/Computer Engineering

Item No. 11 (Defence Laboratory, Jodhpur)—1 Post

Essential Qualifications : MBBS—A medical qualification included in the First Schedule or the Second Schedule or Part II of the Third Schedule to the Indian Medical Council Act 1956 (102 of 1956). Holders of Medical qualifications included in Part II of the said Third Schedule should also fulfil the conditions specified in sub-section (3) of Section 13 of the said Act. (ii) Required Post-graduate degree qualification. (iii) Three years practical experience in radiation medicine or radiosotopic applications.

Item No. 12 (Defence Laboratory, Jodhpur)—1 Post

Essential Qualifications : (i) At least second class Master's degree in Physics with specialisation in Microwave from a recognised University or equivalent. (ii) Four years' research or design or development experience in Microwave area. **Desirable Qualifications :** Doctorate degree in Microwave Physics.

Item No. 13 (Defence Laboratory, Jodhpur)—1 Post

Essential Qualifications : (i) At least second class Master's degree in Micro-biology or Bio-chemistry from a recognised University or equivalent. (ii) Four years' research or design or development experience in water Microbiology/water quality monitoring/water pollution. **Desirable Qualifications :** Doctorate degree in Micro-biology or Bio-chemistry.

Item No. 14 (Institute of Armament Technology, Pune)—1 Post

Essential Qualifications : (i) At least second class Master's degree in Physics or Bachelor's degree in Electronics Engineering from a recognised University or equivalent. (ii) Four years' research or design or development experience in the area of Lasers and Electro-optics of which two years should be teaching at Graduate/Post Graduate level in a reputed institute. **Desirable Qualifications :** (i) Master's/Doctorate degree in Electronics Engineering/Physics with Publications. (ii) Candidates with practical experience in Holography and Design Development and Fabrication of Lasers and setting of experiments with them will be preferred.

Item No. 15 (Naval Physical & Oceanographic Laboratory)—1 Post

Essental Qualifications : (i) At least second class Bachelor's degree in Electronics/Electrical Engineering from a recognised University or equivalent. (ii) Four years' research or design or development experience of hardware for CRT Display systems with knowledge of computer/Microprocessor based graphics techniques and display hardware. **Desirable Qualifications :** Master's degree in Electronics/Electrical Engg.

Item No. 15-A—1 Post

Essential Qualifications : (i) At least Second class Master's degree in Chemistry from a recognised University or equivalent. (ii) Four year's research or development experience in the field of synthesis of characterisation of organometallic compounds. **Desirable Qualifications :** Doctorate degree in the fields of Synthesis of Organometallic compounds with knowledge of handling of NMR instrument and interpretation of its results.

Scientist 'B' (Rs. 2200-4000)—12 Posts

Defence Research & Development Laboratory, Hyderabad)

Item No. 16—4 Posts (UR-2, SC-1 & ST-1)

Essential Qualifications : (i) At least second class Bachelor' degree in Engineering from a recognised University or equivalent. **Desirable Qualifications :** M.B.A. with knowledge of Computer Programming and aptitude for project management.

Item No. 17—2 Posts (UR-1 & SC-1)

Essential Qualifications : (i) At least second class Master's degree in a Science subject including Mathematics or second class Bachelor's degree in Engineering from a recognised University or equivalent. (ii) Post-graduate degree or diploma in Library Science or Associateship of INSDOC/DRTC/M Lib/B Lib Sc. from a recognised University or equivalent.

Item No. 18 (Defence Bio-engineering and Elctro Medical Laboratory, Bangalore)—2 Posts (UR-1 & SC-1)

Essential Qualifications : At least second class Master's degree in Physiology with specialisation in Ergonomics/Human Engineering from a recognised University or equivalent. **Desirable Qualifications :** Doctorate degree in Physiology.

Item No. 19 (Institute of Nuclear Medicine & Allied Sciences, Delhi)—1 Post (UR)

Essential Qualifications : At least second class Master's degree in Genetics from a recognised University or equivalent. **Desirable Qualifications :** Doctorate degree in Genetic or Research experience in Molecular Genetics of Radiation Biology.

Item No. 20 (Institute of Nuclear Medicine & Allied Sciences, Delhi)—I Post (Reserved for SC)

Essential Qualifications : At least second class Master's degree in Bio-Physics from a recognised University or equivalent. **Desirable Qualifications :** Doctorate degree in Bio-physics or experience in Theoretical Biology.

Item No. 21 (Institute of Nuclear Medicine & Allied Sciences, Delhi)—2 Posts (UR - 1 & SC-1)

Essential Qualifications : At least second class Master's degree in Bio-Physics or Bio-chemistry from a recognised University or equivalent. **Desirable Qualifications :** Doctorate degree in Bio-physics or Bio-chemistry with experience in NMR-Spectroscopy or Cell Biology or Flow-cytometry.

GENERAL CONDITIONS

1. **Promotion Prospects :** DRDO offers excellent opport-nities for career advancement. Result Oriented motivated cientists can look forward to promotions to following grades f Scientists :

Scientist 'C' Rs. 3000-4500/-, Scientist 'D' Rs. 3700-5000/-,
Scientist 'E' Rs. 4500-5700/-, Scientist 'F' Rs. 5100-6300/-,
Scientist 'G' Rs. 5900-7300/-.

2. **Age Limits :** (i) For Scientist 'B' not exceeding 28 years; i) Scientist 'C' not exceeding 35 years. (iii) For Scientist 'D' ot exceeding 45 years. (iv) For Scientist 'F' not exceeding 50 ears. Crucial date for determining age is 15 September, 1987. Relaxation of age limit of 5 years is admissible for SC/ST andidates and Govt. servants.

3. **Method of Applying :** Neatly type-written applications on the prescribed application format should be sent to Director, Recruitment & Assessment Centre, Room No. 225 'B' Wing, Sena Bhavan, New Delhi-110011, preferably by Registered cover superscribed 'Application for the post of Scientist' 'Item No.' on plain paper in the prescribed format (reproduced below) accompanied by a crossed non-refundable postal order of the value of Rs. 8/- drawn in favour of Senior Accounts Officer, Recruitment & Assessment Centre, DRDO, payable at New Delhi. There is no fee for SC/ST candidates. Last Date of receipt of applications is **15 September, 1987.** In respect of candidates from Andaman & Nicobar Islands, Lakshdweep and abroad, last date of receipt of applications is **30 September, 1987.**

4. **Method of Selection :** A written test may be conducted for certain posts at selected places. No TA/DA would be admissible for this purpose. Candidates called for interview would be reimbursed actual train/ bus fare by shortest route limited to second class rail fare from the normal place of residence to the place of interview.

5. **Only Indian Nationals need apply.**

6. Candidates should send two self-addressed unstamped envelopes 23 x 10 cms. alongwith the applications.

7. Attested/Xerox copies of certificates/testimonials should be attached to the application form. No ORIGINALS SHOULD BE FORWARDED.

8. Candidates will have to produce original certificates at the time of interview.

9. Incomplete applications or those received late will be rejected and no correspondence would be entertained in this regard.

10. In case SC/ST candidates are not available in requisite number, general candidates will be considered for posts reserved for SC/ST.

11. Candidates working in Govt./Public Sector Undertakings/Autonomous Organisation should apply through proper channel.

12. Prescribed essential qualifications are the barest minimum and mere possession of the same does not entitle any candidate to be called for interview.

13. Candidates desirous of applying for more than one post may apply separately for each post indicating Item No.

14. Candidates on appointment will have the opportunity to carry out Ph. D. with external registration and may be sponsored for doing M. Tech.

15. Opportunities are also available for study leave for carrying out higher studies abroad.

16. DRDS Officers may be sponsored for training abroad.

17. Though initial place of posting is indicated, yet candidates have the liability to serve anywhere in India.

18. Handwritten applications will not be entertained.

19. No. of posts mentioned against each time are tentative and may vary.

20. Knowledge of French, German, Russian, Japanese, Chinese is a desirable qualification for all the above posts.

21. CANVASSING IN ANY FORM WILL MEAN DISQUALIFICATION.

APPLICATION FORMAT

Application for the post of
* (To be indicated)
1. Advertisement No. :
2. Item No. :
3. Details of Postal Order(s)
   No., Date and Amount :
4. Name in full (Shri/Smt./Km.)
   (in block letters) :
5. (a) Date of Birth :

   (In Christian Era in Figure)
   (b) Age as on 15 Sept. 1987

Affix passport
size latest
photograph

6. Nationality :

7. Marital Status :

8. (a) Address for correspondence :
   (b) Permanent Address :
   (in block letters with pin code)

10. Nearest Railway Station :

11. Whether belong to SC/ST : (If yes, attach certificate)

12. Educational Qualifications :

Sr No.	*Course Passed	University/ Institution/ Board	Year of Passing	Subjects taken	Result with Division/ Class

*In chronological order from X standard (SSLC/HS/HSC) onward.

13. Professional Training :

Organisation	Period		Details of training
	From	To	

14. Employment Record :

Name & address of the employer institution	Period of service		Designation of the post held	Scale of pay of each post	Detailed description of work	Reasor for leaving
	from	to				

15. Present basic Pay :

Other allowances :

Total emoluments :

Next Increment due on :

Salary expected :

16. (A) Are you a Govt. Servant

(b) If yes, whether Central/State/UT.

17. Minimum joining time required :

18. List of papers published :

19. Resume of research work/experience, if any :

20. Field of special interest :

21. Are you under any contractual obligation to serv Central/State/Govt/Army/other public sector undertakin or Autonomous body and if so the details.

22. Details of relatives employed in DRDO :

Name of Relative	Relationship	Lab/Estt. in which employed	Post Hel

23. Have you applied for post in DRDO during the past two years ?
If yes, give particulars :

Sr. No.	No. and date of Advt.	Name of Post/ Discipline	Date of Interview	Remarks

24. Any other information you may wish to add (Use separate sheet if necessary)

25. Declaration:

I declare that the foregoing information is correct and complete to the best of my knowledge and belief and nothing has been concealed/distorted. If at any time, I am found to have concealed/distorted any material information, my appointment shall be liable to summary termination without notice/compensation. I will, if and when required, take up duty in the discharge of government assignments anywhere in India.

Place :
Date : Signature of Candidate

davp 87/265

ANNAMALAI UNIVERSITY

FACULTY OF AGRICULTURE

NOTIFICATION No. 8/87

APPLICATIONS are invited for the post of Lecturers in the Faculty of Agriculture on the subjects given below :

1.	Lecturer in Agricultural Botany	1
2.	Lecturer in Horticulture	1
3.	Lecturer in Soil Science and Agricultural Chemistry	1
4.	Lecturer in Agricultural Entomology	1
5.	Lecturer in Agricultural Microbiology	1
6.	Lecturer in Plant Pathology	1
7.	Lecturer in Agricultural Extension	1
8.	Lecturer in Agricultural Economics	1

Qualifications

A person with a Ph.D. degree or Master's degree in the subject concerned with three years experience.

Scale of Pay

Rs. 700-40-1100-50-1600 with admissible allowances. The scale of pay will be revised on the basis of the recommendations of the UGC/State Government shortly.

Those who are in service should route their applications through proper channel.

Application forms can be had from the undersigned on payment of Rs. 10/- by cash/money order/postal order (not refundable). Filled in applications (5 additional copies) should reach the undersigned on or before 12.9.1987.

R. Rajamanickam
REGISTRAR

CLASSIFIED ADVERTISEMENTS

IAN COUNCIL OF MEDICAL RESEARCH

he Indian Council of Medical Re-
ch proposes to appoint a Director
ts National Institute of Virology,
e.

his Institute is engaged in scientific
arch in different aspects of viral in-
ions such as epidemiology, virology,
unology, biochemistry and entomo-
with the object of strengthening
trol measures against viral diseases.
re are excellent facilities for under-
ng research in these areas of modern
nedicine. The Institute is equipped
modern analytical instruments, an
ctron-microscope, animal house,
ary, statistical facilities and other
astructure for conducting clinical
laboratory studies. It has a field
a in Karnataka for conducting epide-
logical studies in KFD.

Job Requirements : It is a top re-
rch management post concerned with
earch and development efforts in
uses and viral diseases of
blic health importance, including
anese encephalitis, Kyasanur
rest Disease, Hepatitis, AIDS, etc. He/
would be required to formulate and
ccessfully implement research pro-
ammes of the Institute and coordinate
th other agencies for health and re-
rch activities. The Director would
eract with State Health authorities to
lp tackle epidemics of viral diseases.
/she would also be responsible for
man resources development. He/she
ll have the overall responsibility for the
rk of the Institute within the frame-
rk of the ICMR system and for ensur-
an atmosphere conducive for creative
rk.

Qualifications & Experience : Essential :
-(a) MBBS or M.Sc. of a recognised
niversity, and (b) M.D./Ph.D./D.Sc., in
edicine/Pathology/Microbiology/Public
ealth or related disciplines or equiva-
t postgraduate qualifications. (ii) Re-
rch experience of 15 years with origi-
work to the credit of candidate.
) Administrative experience in res-
nsible capacity. **Desirable :** (i) Research
perience in arthopod-born viruses.
; Experience in field investigations.

Salary/Conditions of Service: The
ale of pay attached to the post is
s. 2000-125/2-2500 (pre-revised) plus
lowances as per Central Govt. Rules,
cluding a Non-practising allowance of
s. 500/- p.m. to medical graduates only.
rivate practice is not allowed. Benefit
pension admissible. Higher initial
y can also be considered. Free medi-
l aid and leave travel concession are
so permissible for the employee and
s/her family as per Government
ules.

Age: Below 50 years. SC/ST candidatets allowed relaxation in accordance with Government of India Rules.

Candidates called for interview will be paid first class rail fare on production of documents.

Applications from employees working in Government Departments, Public Sector Organisations and Government funded research bodies must be forwarded through proper channel.

Applications can be obtained from the office of the Director General, Indian Council of Medical Research, Post Box No. 4508, Ansari Nagar, New Delhi—110 029 to whom the complete application form should be sent on or before **30th September, 1987** accompanied with crossed Indian postal order for Rs. 8/- made out in the name of the Director General, Indian Council of Medical Research, New Delhi. SC/ST candidates are exempted from this payment. Incomplete and late applications will not be entertained.

MALAVIYA REGIONAL ENGINEERING COLLEGE

JAIPUR

Advertisement No. 3/Estt/87

Applications are invited on prescribed application form by **22.9.1987** for the following posts of Lecturers in the UGC pay scales of Rs. 700-1600 (P=Permanent; T=Temporary). Structural Engg. (1P); Mechanical Engg. (1P, 4T); Electrical Engg./Electonics (1P, 3T). The No. of posts are indicative only and subject to change.

Full particulars and application form may be obtained by sending Rs. 2.50 (cost of application form and postage) in the form of crossed IPO (M.O. will not be accepted) in favour of the undersigned payable at the Post Office at this College alongwith a self addressed unstamped envelope of the size 24 cm. x 10 cm. The application form can also be obtained from the Accounts Section of the College on cash payment of Re. 1/- only.

REGISTRAR

INDIAN INSTITUTE OF SCIENCE

BANGALORE-560 012

NEEDS

1. Deputy Librarian (1A/308/35/87)

Essential : (i) I or II Class M.Lib. Sc. OR M.A./M.Sc./M.Com. with I or II Class B.Lib.Sc. or Diploma in Library Science; (ii) At least 7 years experience as Librarian or in a responsible professional capacity in a University Library. (iii) Ph.D. degree or equivalent research work in a field relevant to the profession.

Desirable : Experience in computerisation of Library Systems and computerised information processing.

2. Scientific Officer in the Centre for Science Information (Reserved for SCHEDULED CASTE) (1A/308/36/87)

Essential : M.E./M.Tech. in Computer Science OR M.Sc. (Engg) with experience in programming in FORTRAN, COBOL, DBMS OR M. Lib. Sc. or Associateship of DRTC or Equivalent followed by three years experience in programming in FORTRAN, COBOL, PASCAL and DBMS.

Desirable : Experience in Cemputer based information retrieval systems.

Emoluments : Post 1 : Rs. 3075/- p.m. in the scale Rs. 1200-1900; Post 2 : Rs. 2124/- p.m. (approx.) in the scale Rs. 700-1300. Grades to have revision when IV Pay Commission recommendations are adopted.

Details and prescribed application forms can be obtained on request (separate for each post) accompanied by a self-addressed Rs. 5-40 stamped envelope of 28 x 18 cms size and crossed IPO for Rs. 5/- drawn in favour of the Registrar, Indian Institute of Science, for Post 1 (free for SC/ST candidates on production of Caste/Tribe Certificate from a competent authority) **before 18-9-1987**. Requests without attested copy of Caste Certificate for Post 2 will not be entertained.

REGISTRAR

JADAVPUR UNIVERSITY

CALCUTTA-700 032

Employment Notification No. A2/C/9/87

The University invites applications in the prescribed form for the following posts :

1. Professor of Physical Chemistry —One post

Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500/-.

Qualifications : Essential

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Specialisation : MSc. Chemistry with Physical Chemistry as specialisation

Desirable : In any branch of Physical Chemistry.

2. Director of Youth Welfare —One post

Scale of Pay : Rs. 1200-50-1300-60-1900/-

Qualifications : Essential

(i) Uniformly good academic record with B+Master's degree or its equivalent.

(ii) At least 7 years' experience in a position involving supervision, administration of College or in an institute of higher learning or a Govt./semi-Govt. organisation/research institution or other academic bodies.

OR

At least 7 years' experience as a teacher in a college or in a University.

(iii) Age not less than 35 years, relaxable in case of exceptionally qualified candidates.

Desirable : (i) A doctorate degree of published papers of high standard.

(ii) Degree or Diploma in Social Welfare.

(iii) Experience in handling student activities or promotion of student welfare activities.

(iv) Proficiency in Extra-curricular activities of high standard.

Last date of receiving application is September 11, 1987.

Application forms are obtainable from the University Office during working hours on payment of Rs. 2/- or on payment of Rs. 3/- inclusive of postal charges. No travelling allowance is admissible to candidates called for interview. Higher initial salary may be given to really deserving candidate. Those who are in employment should submit their applications through proper channel. Choice of the Selection Committee will not necessarily be confined to applicants only. Canvassing in any form will disqualify a candidate. Applications received after the prescribed **LAST DATE** will not be considered.

REGISTRAR

PUNJABI UNIVERSITY

PATIALA

Advt. No. 42/Rect/PRO/87

Applications are invited for the following posts so as to reach the Registrar, Punjabi University, Patiala on **22-9-87.**

1. **Professors** : Two in the Department of Law and One each in the Departments of Bio-technology, Chemistry (for Forensic Science), Psychology, Social Work, Commerce, Music and Geography.

Grade : Rs. 1500-60-1800-100-2000-125/2-2500 (UGC).

2. **Readers** : One each in the Departments of Bio-technology, Chemistry (for Forensic Science), Psychology, Social Work and Computer Science & Applications.

Grade : Rs. 1200-50-1300-60-1900 (UGC).

3. **Lecturers:** Two each in the Departments of Bio-technology, Chemistry (for Forensic Science), Psychology, and One each in the Departments of Social-Work, Urdu, Persian & Arabic (for Urdu), Library & Information Science, Punj Historical Studies.

Grade : Rs. 700-40-1100-50-1 (UGC).

4. **Lecturers** : (University Mo School) Three—One each in Economi Geography and Physics/Chemistry.

Grade : Rs. 700-25-850/30-1000/4 1200-50-1300 (Govt. Grade).

5. **Deputy Librarians** : Two

Grade : Rs. 1200-50-1300-60-19 (UGC).

6. **Assistant Librarians** : Four

Grade: Rs. 700-40-1100-50-1600 (UGC

Note :

1. Except for the post of Professor of Law, Geography & Lecturers in th Punjab Historical Studies and the University Model School, candidates wh have already applied in response to ou advertisement of May, 1987, NEED NO APPLY AGAIN.

2. The Vice-Chancellor could plac before the Selection Committee name of suitable persons for consideratio alongwith the applications received i response to the advertisement.

3. It is not obligatory to call fo Interview every candidate who posses the essential qualifications.

4. The number of vacancies may change.

5. Candidate must possess working knowledge of Punjabi.

6. The Selection Committee might relax the qualifications and experience in exceptional cases.

ASSOCIATION OF INDIAN UNIVERSITIES

AIU HOUSE, 16 KOTLA MARG, NEW DELHI-110002

Applications from Indian citizens are invited for the following post in the prescribed form available on payment of Rs. 2/- from the Office of the Association :

Deputy Secretary : Pay Scale Rs. 3700-5000 (Revised)

Postgraduate with first class or high second class degree with at least ten years experience in an administrative or academic post in University, Government Department/Autonomous Organisation. Knowledge of administrative rules and understanding of issues in university system desirable. Persons with experience of working in Universities/Colleges will be preferred and can be considered for deputation terms.

The post carries dearness and other allowances generally at the Central Government rates. Total emoluments at the initial basic pay of Rs. 3700/- amount to Rs. 5435/- including HRA and Special Allowance. Relaxation in any of the requirements may be made in exceptional cases. The Association reserves the right not to fill up the vacancy advertised, if the circumstances so warrant. SC/ST/Ex-servicemen will be given preference. Canvassing in any form by or on behalf of a candidate will be a disqualification.

Applications complete in all respects should reach the Office by **September 30, 1987.** Persons already in service should apply through proper channel. Applications received after the last date or without complete information may not be entertained.

The details of qualifications, alizations etc. will be supplied with the application form.

pplication forms can be obtained the Head, of our Publication au, on payment of Rs. 5/- at the ter OR by sending IPO for Rs. 5/- in ur of the Registrar, alongwith self- essed envelope of the size 25 x 10 with postage worth Rs. 3.40, rscribing on it 'Application Form for 'ost of——————'.

REGISTRAR

NTRAL LEATHER RESEARCH INSTITUTE

ouncil of Scientific & Industrial Research)

Advertisement No. 3/87

he Central Leather Research Insti- , a national laboratory of CSIR, is largest research institution in the ld devoted to leather science and nology. Current activities related ptimization of processes for im- ved leather manufacture, new chemi- auxiliaries for leather processing and hing, chemical process development design, environmental technology, er utilisation of tannery and slaugh- house wastes and footwear science engineering and leather goods re- rch, supported by relevant R & D in- s from organic, inorganic, physics, -inorganic and biochemistry, micro- logy, polymer sciences, biophysics, mical engineering and leather techno- y groups.

The laboratories of CLRI are well ipped with sophisticated instruments, ch scale and pilot plants and compu- centre with latest CAD system and i computers for leather products de- and other research applications.

CLRI proposes to recruit highly talen- researchers with proven professional ainments in some of the above areas the following positions. The R & D ivities in the Institute being largely mu- isciplinary, the prospective scientists expected to have the necessary abi- and flexibility to work in teams be- es being innovative and highly profes- nal.

tegory I—Scientific

Scientist E.I/E.II - 4 Posts

Rs. 3700-125-4700-150-5000 (Group IV(3) OR

Rs. 4500-150-5700 (Group IV(4)

t—1 (Chemical Physics Area)

Qualifications & Experience : I Class Sc. in Chemistry/Physics with 12 years erience or Ph.D. with 10 years expe- nce, with special orientation in Mag- ic Resonance Spectroscopy and oretical chemistry including speciali- on in theory, instrumentation and experimental methods. Original contributions of high calibre as evidenced by publications.

Desirable: Experience in planning, setting up and running sophisticated magnetic resonance facilities.

Job Requirements: To lead a team of researchers in the area of Chemical Physics/Magnetic Resonance Spectroscopy engaged in Projects of fundamental and applied research. To plan and execute high calibre contemporary research in NMR, EPR and related fields and to plan for creating a multi-purpose high field NMR and modern EPR facilities in the Institute.

Post—2 (Polymer Science Area)

Qualifications & Experience : Ph.D. in Polymer Chemistry/Technology/Organic Chemistry with 10 years R & D experience in synthesis and application of polymers in the coating and adhesive fields with outstanding original work as evidenced by patents/publications and proven ability for planning and carrying out independent work of high quality.

Desirable: Theoretical and practical/industrial experience in polymers and conversant with pilot plant studies on polymers. Capability to generate new and original approaches in this area.

Job Requirements: Expected to organise and conduct research on synthesis and preparation of resins, lacquers and emulsions for leather finishing and tanning aids. Initiate R & D work to synthesise and formulate new polymeric systems needed for leather and leather product applications and development of adhesives for footwear and leather goods application.

Post—3 (Technical Services)

Qualifications & Experience : I Class B.E./B. Tech. in Mechanical Engineering with 12 years experience, preferably with M.E./M. Tech./Ph.D. qualifications in Machine Design/Machine Tools/Industrial Engineering with a minimum of 10 years experience in the relevant field.

Desirable: (i) Experience in the management of centralised workshop facilities in a R & D or Industrial organisation; (ii) Expected to be conversant with operation, maintenance and design of tanning/footwear machinery and chemical process plants. (iii) Knowledge in the application of computer techniques for engineering jobs. (iv) Teaching experience in Machine design/Mechanical Engineering.

Job Requirements: This is a senior management position in Technical Services. The selected candidate has to provide leadership to a team of mechanical electrical, automobile, electronic and refrigeration engineers and technicians engaged in design, fabrication, maintenance and operation assignments connected with the various functional areas of the Institute. Teaching of footwear machinery to postgraduate students may be one of the academic responsibilities.

Post—4 (Biotechnology)

Qualifications & Experience: Ph.D. in an area of biochemistry, biophysics, biotechnology, molecular biology or any other related branch of modern biology with atleast 12 years research experience after M.Sc. The candidate should produce evidence of independent work of a high quality such as outstanding publications, academic honours and patents and should be capable of generating new and original research ideas.

Job Requirements: The selected scientist is expected to perform research as well as to lead a research group on biotechnology or biochemistry relevant to leather science and collaborate with researchers of other disciplines in CLRI and outside and promote growth of interdisciplinary programmes.

2. Scientist 'C'/'E.I—2 Posts

Rs. 3000-100-3500-125-4500 (Group IV (2) OR

Rs. 3700-125-4700-150-5000 (Group IV (3)

Post—1 (Biophysics Area)

Qualifications & Experience : I Class M. Sc in Physics with 6 years experience Ph. D in Biophysics/Physics with 2 years experience (for Scientist C)/ I Class M.Sc. in Physics/Biophysics with 12 years experience or Ph.D. in Biophysics with 10 years experience (For Scientist E. I) pertaining to Biophysical aspects of proteins and related molecules as evidenced by publications in International journals and demonstrated ability to lead a team of researchers in Biophysics group.

Desirable : Experience in imaging of matrices of biological substances and knowledge in the area of material testing, electron microscopy, ultrosonics and magnetic resonance.

Job Requirements : To plan and conduct R & D projects in the development of testing techniques for collagen and leather. To lead a team of scientists working on viscoelasticity and biomechanical aspects of collagen and leather.

Posts—2 (Plant Design)

Qualifications & Experience : M. Tech/Ph.D in Chemical Engineering with Chemical Plant Design as specialisation. Experience in relevant field of atleast 4 years for M. Tech., and one or two years for Ph.D for Scientist 'C' and 10 years for M.Tech., and Ph.D in case of Scientist E. I.

Desirable : Familiarity with computer aided flowsheeting, graphics, ASME and other codes, project engineering of tanneries and chemical process plants.

Job Requirements : To provide project leadership in basic design engineering assignments and to supervise the work of junior scientists in chemical process equipment design.

3. Scientist 'C'—3 Posts

Rs. 3000-100-3500-125-4500 (Group IV (2)

Post—1 & 2 (Chemical Engineering Area)

Qualifications & Experience : M. Tech./M.E./Ph.D in Chemical Engineering with specialisation in Process Control/Polymer Reaction Engineering/Thermodynamics. 4 years experience with M. Tech./M. E. or 2 years experience with Ph.D qualification in a Chemical Engineering research laboratory.

Desirable : Capability (a) to set up independently a research laboratory in the desired area of specialisation. (b) To design and supervise experimental investigations, analyse plant data and prescribe suitable measures for commercial chemical plants and tanneries and (c) to interact effectively with scientists of other disciplines.

Job Requirements : To provide leadership to multi-disciplinary research teams and to supervise day-to-day research work in the area of specialisation, including chemical process development.

Post—3 (Intrumentation)

Qualifications & Experience : I Class M.Sc. in Physics/Electronics/Chemistry with 6 years of experience or M.Tech (Electronics) with 4 years experience in handling, maintenance and operation of sophisticated analytical instruments. Proven record of high proficiency in maintaining analytical instruments like HPLC, FT instruments, NMR, UV Visible and other spectrometer.

Desirable : Experience in running a centralised instrumentation service centre and maintenance of electronic intruments.

Job Requirements : To maintain and operate a range of analytical instruments and be responsible for the functioning of the central instrumentation facility and rendering service to R & D personnel.

4. Scientist 'B'/'C'—2 Posts (Leather Process Technology)

Rs. 2200-75-2800-EB-100-4000
(Group IV (1) OR
Rs. 3000-100-3500-125-4500
Group IV (2)

Qualifications & Experience : I Class M.Tech in leather technology. Preferably with practical experience in a commercial tannery for 2-3 years. Should be well acquainted with modern leather processing technology. A minimum of 4 years experience is required for Scientist 'C' position.

Job Requirements : To plan and execute research projects in process control and optimisation of tanning processes/low waste technologies with accent on energy, water and chemical savings.

5. Scientist 'B'—10 Posts

Rs. 2200-75-2800-EB-100-4000
(Group IV (1)

Post—1 (Biotechnology Area)

Qualifications & Experience : I Class M.Sc. in Microbiology/Biochemistry/Botany.

Desirable : 5 years experience in the above area or Ph.D in any of the above disciplines, supported by research publications. Knowledge in Biotechnology.

Job Requirements : Expected to work in the bioabsorption of heavy metals and biodegradation of toxic organic substances.

Post 2— (Chemical Physics Area)

Qualification & Experience : I Class M.Sc. in Spectroscopy/Physical Chemistry/Theoretical Chemistry preferably with Ph.D qualification in the same subject.

Desirable : Experience in practical magnetic resonance, quantum chemical computation and spin dynamics calculations—NMR Instrumentation.

Job Requirements : Expected to work in R & D projects involving application of FT-NMR and EPR and Data interpretation employing quantum chemical methods ; to manage the NMR facilities.

Post—3 (Polymer Science Area)

Qualifications & Experience: I Class M.Sc. in Polymer/Organic Chemistry preferably with Ph.D. qualification in the area of polymers.

Desirable : Research experience on modification of natural polymers like casein, gelatin, cellulose for leather applications.

Job Requirements : To work in the field of polymer synthesis, their modifications and characterisation.

Post—4 (Engineering Sciences Division)

Qualifications & Experience : I Class M.Sc. degree in Environmental Sciences/Environmental Technology.

Desirable : Experience of about 2 to 3 years in the fields of water and industrial waste water sampling, analysis and treatability studies.

Job Requirements : To assist senior scientists in carrying out field studies, characterisation of effluent samples and in preparation of project reports for effluent treatment units of tanneries and chemical process plants.

Post—5 (Plant Design)

Qualifications & Experience : I Cla B.E./B. Tech. in Chemical/Mechanic Engineering or M.Tech./M.E. in Chem cal Plant Design/Equipment Design.

Desirable : Post-graduate degree i Chemical Plant Design or 2 years exp rience in basic engineering of chemic process plants or tenneries; Familiari with computer programming i FORTRAN-IV/BASIC/C languages.

Job Requirements : To participat in process and equipment design activ ties related to basic engineering assign ments.

Post—6 & 7 (Chemical Engineering Area

Qualifications & Experience : I Clas B.Tech/B.E. in Chemical Engineering o M,Tech./M.E. in Chemical Reactio Engineering/Process Control/Heat an Mass Transfer/Thermodynamics.

Desirable : Knowledge of compute programming, modelling and simulatio of chemical process plants.

Job Requirements : To participate i process development/properties evaluation activities of research projects.

Post—8 (Computer Centre)

Qualifications & Experience : I Class B.E./B.Tech in Chemical Engineering/Mechanical Engineering with Computer Science as on elective subject or M.Sc. in Computer Science/Statistics with 1 or 2 years experience in softwore development related to chemical process equipments/statistical analysis/chemical hazard analysis/unite element analysis.

Job Requirements : To assist the senior scientists in developing computer software in the selected area and in programming in high level Fourth Generation Computer Languages.

Post—9 (Leather Product Technology)

Qualifications & Experience : M.Tech. in Leather Technology with knowledge of manufacture and Computer Aided Design for footwear of B. Tech. (I Class) in Leather Technology/Mechanical Engineering with advanced knowledge/training in footwear science and engineering or B.Tech. followed by M.S. in Bio-medical Engineering.

Job Requirements : To assist the senior scientists of Footwear area on problems connected with footwear R & D *viz.* gait analysis, shoe last designing, footwear designs and fabrications and quality control.

Post—10 (Microbiology)

Qualifications & Experience : First Class M.Sc. Preferably a Ph.D. candidate with a good record of original work evidenced by publications in reputed journals, preferably related to leather processing and preservation preferred. R&D experience in biotechnology desirable.

ob Requirements : To assist senior tists in the planning and execution of D projects on biodegradation and gical treatment of tannery effluents heir disposal/utilisation, and leather ervation.

gory II—Technical

enior Technical Assistant—1 Post Polymer Science Area)

ts. 1640-60-2600-EB-75-2900
Group III(2)

ualifications & Experience : Degree hemistry preferably with 3-5 years erience in the field of polymers.

esirable : Experience in the devement of surface coatings and adhesives pplied to leather and leather prots.

Job Requirements : To assist senior entists working in the development of esives and other polymeric products leather processing.

Senior Documentation Assistant— 1 Post (Information Scinces)

Rs. 1640-60-2600-EB-75-2900
(Group III(2)

Qualifications & Experience : A good gree in Science with Chemistry as one the subjects with M.L.I.S. or equivalent th 3-5 years experience or M.Sc. with emistry at B.Sc. level and B.L.I.S. with ears experience.

Desirable : Master's Degree in ience and Library/Information Science d Documentation with proven knowdge and experience in computer applitions in library and information field.

Job Requirements : To assist in liary and documentation activities incluing application of computers to inforation, handling and compilation of bliographics directories, etc.

Technical Assistant Grade VIII— 8 Posts

Rs. 1400-40-1800-EB-50-2300
Group III(1)

Post—1 (Collagen Area)

Qualifications & Experience : Degree Chemistry/Biology.

Desirable : 3 years of experience in a icrobiological/biochemical lab. of a esearch institution.

Job Requirements : To assist the cientists in Microbiological/Biochemial experimental work.

Post—2 (Chemical Physics Area)

Qualifications & Experience: Degree in hysics/Chemistry with good academic ecord and aptitude for Instrumentation r 3 year Diploma in Electronics, with 2 years experience in Radio frequency/microwave electronics, digital electronics, experience with personal/mini computers.

Desirable : 1 Class degree with proven aptitude for Instrumentation. Experience in NMR/EPR Laboratory.

Job Requirements : To maintain, operate and run routine spectra on 90 MHz FT-NMR facilities.

Post—3 (Plant Design)

Qualifications & Experience : 3 years Diploma in Mechanical Engineering/Chemical Engineering with machine design as elective/specialisation. Preferably 1 or 2 years drafting experience in a reputed design engineering office.

Desirable : Familiarity with chemical process flowsheets and engineering flow diagrams.

Job Requirements : To assist the senior scientists in plant design and drawing.

Post—4 & 5 (Leather Process Technology)

Qualifications & Experience

Post—4 : A degree in leather technology or a diploma in Leather Technology.

Desirable : 2-3 years experience in leather manufacture.

Job Requirements : To carry out experiments in processing of upper leathers, garment and glove leathers, sports goods leathers etc.

Post—5 : B. Sc. in Chemistry with knowledge of various chemical principles involved in leather processing or B. Tech. in Leather Technology with a thorough knowledge in the physical testing and chemical analysis of various types of leathers.

Desirable : 3-5 years experience in a testing laboratory in the case of B.Sc. degree holders.

Job Requirements : To assist senior scientists in quality control and process standardisation of different types of leathers.

Post—6 (Chemical Engineering Area)

Qualifications & Experience : A Diploma in Chemical/Mechanical Engineering/Leather Technology or B.Sc. with Mathematics, Physics and Chemistry.

Desirable : First Class in their respective degrees/diplomas, with 1 or 2 years experience in a research laboratory or pilot plant is preferred.

Job Requirements : To assist the senior scientists in operation and maintenance of chemical process equipments and instruments in bench and pilot scale plants.

Post—7 (Instrumentation)

Qualifications & Experience : Degree in Chemistry/Physics and good working knowledge in spectroscopic and chromatographic techniques.

Desirable : I Class with 1-2 years experience in a well equipped R & D laboratory with capability to operate GC, HPLC and spectroscopic instruments.

Job Requirements : To assist the scientists in running the central instrumentation facility and in the maintenance of the various instruments.

Post—8 (For Regional Centre for Extension & Development (CLRI), Jalandhar.

Qualifications & Experience : Degree in Chemistry or Diploma of 3 years duration in Leather Technology.

Desirable : 8 years experience in a commercial tannery. Experience in processing of sports goods leathers and other varieties of finished leather from buff calf. Knowledge of Punjabi/Hindi preferable.

Job requirements : To assist the Scientist-in-charge in technical activities of the centre and in extension services in the northern region.

General Conditions

1. The post of Scientist E.I/E. II, Scientist C/E.I, Scientist 'C', Scientist B/C and Scientist B are contractual for a period of six years (including the period of probation of two years) in the first instance and the other posts are temporary. All posts carry usual allowances as admissible under Central Govt. Rules. Higher initial start may be considered for deserving candidates. Total emoluments at the minimum of the grades at present are as follows :-

On Rs. 4500/-	—Rs. 5880/-
On Rs. 3700/-	—Rs. 4880/-
On Rs. 3000/-	—Rs. 3940/-
On Rs. 2200/-	—Rs. 2926/-
On Rs. 1640/-	—Rs. 2296/-
On Rs. 1400/-	—Rs. 1807/-

2. Candidates with engineering qualifications if so required, are liable to serve in any defence service or post connected with defence of India for a period of not less than 4 years including period spent on training, if any, provided that such a person (a) shall not be required to serve on the above post after expiry of ten years, from the date of appointment and (b) shall not be ordinarily required to serve as aforesaid attaining the age of 45 years.

3. **Reservations :** For the posts under Sl. No. 4 & 5 Scientist B/C & Sct. B 3

posts are reserved for Scheduled Caste and 3 posts are reserved for Scheduled Tribe. For the posts of Senior Technical Assistant/Senior Documentation Assistant—One post is reserved for Scheduled Tribe. Out of the 8 posts of Technical Assistant Grade VIII two posts are reserved for Scheduled Caste.

4. A lower standard consistent with efficiency will apply in the case of SC/ST candidates. Candidates belonging to these communities should invariably enclose an attested copy of the caste certificate issued by a competent authority along with their applications, failing which they will not be entitled to the concession.

5. The number of vacancies mentioned against each category is provisional and may vary at the time of selection. If more approved vacancies with identical job requirements become available at the time of selection, these also can be filled from the candidates who apply in response to this advertisement.

6. Candidates working in Govt./Semi Govt. Offices/Public Sector undertakings should send their applications through their employers so as to reach the Institute within 15 days from the due date of receipt of applications. Advance copy of the applications will be considered only if the original applications are received through proper channel.

7. The Institute has a system of periodic assessment promotion on merit. For this purpose, Scientific and Technical posts are categorised into 4 groups on the basis of nature of work. Group IV is the top most group meant for scientific staff and commences with Group IV(1)—Rs. 2200-4000 with scope for promotion from grade to grade upto Group IV(5)—Rs. 5100-150-5700-200-6300 subject to prescribed conditions Group III is the next lower group meant for Technical staff and its lowest grade is Group III(1) (Rs. 1400.2300) with possibility for promotion from grade to grade upto Group III(5)—Rs. 3000-100-3500-125-4500 subject to prescribed conditions. Members of Group III possessing M.Sc./B.E. or equivalent qualifications cannot move to Group IV. Their promotion is confined to Group III only.

8. Applications should be submitted for all the 2 categories in the prescribed form obtainable upto **15.9.1987** on request from the Administrative Officer, Central Leather Research Institute, Adyar, Madras 600 020, by sending a self addressed stamped (Re. 1.40) envelope (25 cms x 15 cms) indicating the No. of Advertisement, Category of post and the post applied for. Applications completed in all respects, accompanied by a Crossed Indian Postal Order payable to Director, CLRI, at Adyar P.O., for Rs. 8/- towards application fee (No application fee for SC/ST candidates) should reach on or before **25.9.1987**. Separate applications s
be sent for each post applied for,
with the requisite Postal Order.
dates should send the IPO only wi
completed applications.

9. Travelling allowances as a
sible under the rules will be paid f
interviewed candidates. SC/ST
dates not employed in Govt./Semi
Organisations / Govt. Undertaki
Corporations etc. will be paid tr
ing expenses as per rules.
enquiries concerning research acti
are welcome, interim enquiries rega
recruitment progress or incom
applications or request for forms wi
self-addressed and stamped envelope
not be considered.

10. Since it is not possible to ca
the applicants for interview/Test,
applications will be shortlisted for
purpose and the decision of a
constituted Screening Committee o
Institute will be final in this matter.

"Canvassing in any form an
bringing in any Influence, Politica
otherwise, will be treated as a disq
fication for the posts".

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(UNIVERSITY OF DELHI)
DHAULA KUAN, NEW DELHI-110021
Telephone : 673436

Applications in the prescribed proforma, obtainable from the College Office on uest or by sending self-addressed stamped envelope (23 cm x 10 cm), are invited the following posts of lecturers, in the grade of Rs. 700-1600 and usual allowances, per the University of Delhi rules:

I. 1. History	—	(Permanent Vacancy) — 1
2. Mathematics	—	(Permanent Vacancy) — 1
3. Political Science	—(i)	(Permanent Vacancy) — 1
	(ii)	(Part-Time) Temporary Vacancy — 1
II. Director of Physical Education	—	(Permanent Vacancy) — 1

alifications

For lecturers' posts listed at 1 to 3 :

(a) A Doctorate degree or research rk of equally high standard; and

(b) Good academic record with at st Second Class (C in the seven point le) Master's degree in a relevant subt from an Indian University or an uivalent degree from a foreign Unirsity.

Having regard to the need for deveping inter-disciplinary programmes, the gree in (a) and (b) above may be in levant subjects.

Provided that if the Selection Comittee is of the view that the research ork of a candidate as evident either om his or her thesis or from his or her blished work is of a very high standard may relax any of the qualifications escribed in (b) above.

Provided further that if a candidate ssessing a Doctor's degree or equivant research work is not available or is t considered suitable, a person possessg a good academic record, (weightage ing given to M.Phil or equivalent gree or research work of quality) may appointed on the condition that he will ve to obtain a Doctor's/M.Phil degree give evidence of research of high ndard within ten years of his appointnt, failing which he will not be able to rn future increments until he fulfils ese requirements.

For determining "good academic cord" the following criteria shall be opted :

(i) A candidate holding a Ph.D./ Phil degree should possess at least a cond class Master's degree ; or

(ii) A candidate without Ph.D./M.Phil gree should possess a High Second ass Master's degree and second class in Bachelor's degree ; or

(iii) A candidate not possessing Ph.D Phil degree but possessing second ss Master's degree should have obtaid first class in the Bachelor's degree.

Desirable Qualification for the Post of Lecturer in History

Specialization in European/Modern Indian History. Knowledge of Russian History and ability to teach through the Hindi Medium will be an additional qualification.

Qualification for the Post of Director of Physical Education

(i) A Master's Degree in Physical Education (High Second Class) with Diploma in Sports Coaching from a recognised Institute.

OR

A Master's Degree in Physical Education (High Second Class) with a record of having represented his University at the Inter-University level/State level in the National Championship.

(ii) Minimum experience of ten years in organising games and sports (as exemplified in handling of about half a dozen teams in a year in his Institution and their participation in the University/Inter College Tournaments) and ability to encourage mass participation in games and sports.

Note : The College reserves the right to revise the actual number and the nature of vacancies to be filled up subject to the actual need and within the teacher-pupil ratio constraints.

Completed applications for the posts listed above, alongwith attested copies of degrees/testimonials, should reach the Principal on or before **18.9.87**.

Dr. R.K. Kaushik
PRINCIPAL

PANJAB UNIVERSITY
CHANDIGARH
(Advt. No. 6/87)

Applications are invited for the following posts of Professors in the Pay-scale of Rs.1500-60-1800-100-2000-125/2-2500 so as to reach the registrar, Panjab University, Chandigarh, alongwith Postal Orders of Rs. 10/- by **17.9.1987**. Fourteen days extra time is permissible to persons who have to submit their applications from abroad :

1. Bhai Vir Singh Studies in Modern Literature-1
2. Panjabi Lexicography (Unit)-1
3. Panjabi-1
4. Sociology-1

A. Qualifications : Essential :

An eminent scholar with published work of high quality actively engaged in research. About ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

B. Desirable

1. Professor in Bhai Vir Singh Studies in Modern Literature :

Scholars with specializations of Comparative Modern Indian Literature with experience in teaching and guiding research in the field of comparative study of modern Panjabi Literature with any other modern Indian Literature.

2. Panjabi Lexicography (Unit)

Scholars in the field of applied linguistics/semantics will be given preference.

Note : 1. The Vice-Chancellor could place before the Selection Committee names of suitable persons for its consideration alongwith the applications received in response to the advertisement.

2. It is not obligatory on the part of the University to call for interview every candidate who possess the essential qualifications.

3. The number of vacancies may change.

4. The University may also prepare a panel of suitable candidates for appointment against vacancies occurring within a specified period.

Candidates who do not possess a doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their published work. The candidate has the option to fill this form in all respects on both sides and to attach 9 photostat copies thereof. The candidates are also required to attach ten copies of the list of their research publications with their 'Summary Biodata'.

Persons already in service must route their applications through proper channel. They may, however, send an advance copy of their application, on the prescribed proforma, direct to the University. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Incomplete forms will not be considered. Forms received after the due date are liable to be rejected unless the Vice-Chancellor condones the delay by a special order. Attested copies of certificates in support of qualifications for Matriculation/School Leaving, Graduation, Post-graduation examination as also for Doctorate degree, be attached to the application. Canvassing in any form will disqualify the candidate.

Application forms can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Rs. 2/- or by making a written request to the Assistant Registrar (Estt. 1), Panjab University, accompanied by a self-addressed stamped (worth Rs. 3.40) envelope of 23 x 10 cms and postal order of Rs. 2/- drawn in favour of the Registrar, Panjab University, Chandigarh.

MMG/5296

DEVI AHILYA VISHWAVIDYALAYA, INDORE

University House, Indore-452 001

Advertisement No. Estt/III (9)/87 **Dated : 20.8.1987**

Applications in the prescribed forms are invited for the following posts in the University Teaching Departments/Computer Centre so as to reach the undersigned on or before **5th October, 1987.**

S. No.	Department	Post
1.	Bio-Chemistry	(a) Professor-1 (b) Reader-1 (c) Lecturer-1
2.	Physics	(a) Professor-1 (b) Reader-1
3.	Life Sciences	(a) Professor-1 (b) Reader-3
4.	Chemistry	(a) Professor-1 (b) Reader-1 (c) Lecturer-2
5.	Mathematics	(a) Reader-2 (b) Lecturer-1
6.	Statistics	(a) Reader-1 (b) Lecturer-1
7.	Education	(a) Professor-1 (b) Reader-1 (c) Lecturer-2
8.	Economics	Lecturer-2
9.	Business Management	Reader-1
10.	Journalism and Mass Communications	Reader-1
11.	Computer Centre	(a) Head of Computer Centre-1 (b) System Engineer-1 (c) System Analyst-1 (d) Maintenance Engineer (Jr.)-2

2. The scales of pay for the above posts and present total emoluments on initial basic salary in each scale are as follows :

Post	Old U.G.C. Scale of Pay (under revision)	Emoluments on initial Basic Pay
Professor/Head of Computer Centre	Rs. 1500-60-1800-100-2000-125/2-2500/-	Rs. 3725/- Approx.
Reader/System Engineer	Rs. 1200-50-1300-60-1900/-	Rs. 3370/- -do-
Lecturer/Programmer/Maintenance Engineer (Jr.)	Rs. 700-40-1100-50-1600/-	Rs. 2310/- -do-

3. Application forms together with details of qualifications, specialisation etc. can be obtained from the University Office on payment of Rs. 5/- in person or by sending a Crossed Indian Postal Order of Rs. 10/- payable to the Registrar, Devi Ahilya Vishwavidyalaya, Indore.

S.P. Arya
REGISTRAR

INTERNATIONAL INSTITUTE FOR POPULATION SCIENCES

(Deemed University)

Govandi Station Road, Deonar,
Bombay-400088

Applications are invited for the following posts :

1. Professor in Population Studies (Three)—two with specialisation in the field of inter-relationship between population dynamics and economic development and/or social change (one in economics and other in social change) and another with specialisation in Public Health and Mortality Studies. **Scale of Pay : Rs. 4500-150-5700 (Revised).**

2. Reader in Population Studie (Two)—one with specialisation in Migration and/or Urban Studies and another in Public Health and Mortality Studies. **Scale of Pay** : Rs. 3000-100-3500-125-5000 (Revised).

3. Lecturer in Population Studies (Three)—two with specialisation in the field of inter-relationship between population dynamics and economic development and/or social change and another with experience in organizing short-term training Courses. **Scale of Pay** : Rs. 2200-75-2800-EB-100-4000 (Revised),

The application form along with the details of qualifications, experience etc. required for the posts may be obtained from the Administrative Officer either in person or with a self-addressed envelope of 25 x 12 c.m. in size, affixing Re. 1.50 stamp, indicating the post for which the application form is requested.

The posts carry dearness and other allowances as admissible to Central Government employees of equivalent grade stationed in Bombay. The last date for request for application form is 14th September 1987. The completed applications should reach the Institute latest by **30th September, 1987**.

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Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157

University
News

ONDAY, SEPTEMBER 7, 1987 Rs. 1.50

- - SEP 1987
C. F. T. R. I., MYSORE

GAU CONVOCATION

Dr. N.S. Randhawa (second from right), Director-General, Indian Council of Agricultural Research, delivered the convocation address at the Gujarat Agricultural University. Seen on his right are Shri R.K. Trivedi, Governor of Gujarat and Shri R. Parthasarathy, Vice-Chancellor of the University.

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UNIVERSITY
NEWS

OL. XXV SEPTEMBER 7
o. 36 1987
rice Rs. 1.50

Weekly Chronicle of Higher
ducation published by the
ssociation of Indian Universities

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JTINDER SINGH

A Case for Intellectual History of India

UNIT
23 SEP 87
C.F.T.R.I. MYSORE

Prof. B. Sheik Ali, Vice-Chancellor, Goa University, delivered Prof. M. Ruthnaswamy Centenary Endowment Lectures 1987 at Annamalai University. These erudite lectures marked by felicity of diction focus on the Hegelian view that history is mind clothed in the form of events. The first lecture, which is reproduced below, put up a strong case for an Intellectual History of India, while the second, dealing with Meanings in History, will be carried in our next issue of 14th September, 1987.

Intellectual History which is so popular in the west particularly in Germany and in America has hardly made any dent on Indian mind. It is a paradox that India which is so universally known for the sublimity of its higher thought is yet to produce a connected account of how those higher thoughts influenced events, how they led to movements, and how refined speculations, faith, belief, philosophy, art, literature, social attitudes, common prejudices and traditions acted a warps and woofs to weave the cultural tapestry of our land. A country like the United States of America with a history of hardly two hundred years has offered more than sixteen different schools of thought as a conceptual framework to explain the trends in their history. We boast of history from Mohenjo-Daro period and have not yet fully and satisfactorily analysed the factors and concepts that impinge on the flow of creative vision of those who made our history. We have not answered several questions. What actually was the motivating force that shaped the events of our land ? What is the genesis of our ideas ? How were those ideas processed to be adopted ? How did they influence our beliefs and actions ? What tensions have they created ? What problems have they generated ? What further ideas they lead to ? These and many other issues have yet remained unanswered. It is the job of intellectual history to answer them, and in a way intellectual history is nothing but the history of ideas.

Intellectual history in the simplest terms stands for the impact of high ideas on the life-style of a society, which we call culture. Culture is that complex whole which includes knowledge, belief, art, morals, customs and any other capabilities and habits acquired by man as a member of the Society. We put the question how do cultures arise? The answer would depend upon who is answering the question. If he is a theologian he would say, the doctrine of Divine Will determines the course of events. If he is a metaphysicist, he would attribute it to a dominant concept or an ideology. If he is a rationalist or a progressive thinker, he would hold that a society's urge for a change manifesting itself in its thought and labour would explain the situation. If he is an utilitarian, he would urge that the machinery of law and Government which is intended to do greatest good to greatest number moves the wheels of history. If he is a romanticist, he would be lost in a dream of his own, and would say that impulsive spontaniety reigns supreme in history. If he is a sociologist, he would offer the explanation that the hard common sense of a people prompts action, which when wisely and collectively adjusted results in the progress of man. If he is a Marxist, he would pin hopes on material factors with pragmatic tools hoping history would serve the purpose of curing economic and social ills of the Society. If he is the prophet of frontier theory, which is so popular in America, he would say that the decisive factor is the interaction of the forces from regions outside the frontier of a country with people within the country. Late Professor Muhammad Habib of Aligarh seems to agree with this view in respect of our medieval history where he says that the ethnic solidarity of foreigners dominating a subordinate local bureaucracy of Hindus and converts happened to be the main motivating force of the Sultanate period. My point is that intellectual history that takes note of the cumulative impact of all dominant ideas that shape history have not been analysed by our scholars in the manner they deserve to be done. My plea is that a historian who is a statesman of ideas and a poet of the mind should reconstruct our past in such a way as to present the soul and substance of history, not in bits and pieces, not social or political or economic factors alone in isolation, but the entire image of India the whole organic corpus, with all its patterns, designs and styles. This job is yet to be done.

A wrong notion exists that our ancients lacked historical sense. Such catchy statements are made as, "If chronology is the eye of history, ancient Indian history will always have to be blind." "If history is a scientific record of unique events set in their correct perspective, Indians were ignorant of it." "If history is an inquiry into the past with the logical purpose of explaining its causes and consequences, ancient Indians had no historical sense." All this is true from the narrow angle of the textbook definitions of history. But if history is philosophy in motion, Indians could never be excelled. If history is the record of the growth of human mind, nowhere else we would find such profuse growth. If history is the reflection of what goes on in the realm of reality with which man is concerned, we have to revise our old notion that Indians were poles apart from historical consciousness.

If we are talking about intellectual history, we have a mine of information in the literature of our past with which to reconstruct the mansions of history. Legends myths, traditions, epics, puranas, itihasas, Sangam literature, dharmasastras, aranyakas, poetry, drama, philosophy and a variety of other kinds of literature, which are not history in themselves, and yet they contain precious gems of history which form the soul and substance of intellectual history. The need is to know how to sift that material. It is certainly a gold mine with grains of precious metal mixed with heaps of rocks. Ancient Indians did not build historical mansions. They cut the querries, chiselled the stones, softened the edges, conceived the plan, but did not implement the project. It was not beyond the reach of those who comprehended the cosmic consciousness to narrate events happening around them. They deliberatively ignored them, perhaps thinking that the task was too simple, and not challenging enough. Perhaps they thought that conflict, confusion, warfare, cheating, looting, change of fortune, rise and fall of dynasties were all too transitory to engage their attention. Lust, greed, anger, hatred, pride, selfishness, ignorance, ambition and desire which form the constituents of power struggle did not strike their fancy. Perhaps, the necessity which prompted the Romans, the Christians and the Arabs to write history to serve the cause of either political expansion or propagation of faith, was not there before them. Perhaps the basic philosophy of the people, the social structure of the time, the intellectual leadership through the ages, the psychology of the masses and the isolated position of India from the west, might have prevented the ancients to write the type of history we comprehend now. But the fact remains that they were making history, but not writing history. Whatever the reasons may have been, it is a fact that Indians did not write history in the past, although it is also a fact that India did not lack ideas in history. This is exactly the reason why intellectual history of India has become essential.

Indians have answered many of the difficult questions with which intellectual history is confronted. What is the purpose of life? What are the obstacles in achieving this purpose ? What constitutes the real wealth of a nation ? What is meant by constructive change ? What is the future of mankind? What is the value of life and what is the place of religion? How should moral codes and concepts be adapted to the changing pattern of the world? Questions such as these and about the meaning of life and death, peace and war, power and authority, love and sex in human relationship, family institutions, control and use of knowledge, and many other relevant issues find answers in the literature of India. The scope of this paper is not adequate to discuss fully all answers that have been furnished. However, only an attempt is made to touch the fringe of the problem.

On basic issues of life such as what should man live for, our ancients have said that he should live for loving, understanding, sharing, caring and for creative tasks. They have epitomized the whole philosophy in one word, "DHARMA" for which there is no exact English equivalent. Righteousness, perhaps, comes very lose to that. Everything in the universe has its 'dharma' on which its existence depends. The essential nature of a thing becomes 'dharma' or attribute or duty. Man's survival would depend on his performance of 'dharma', a concept which has profound implications. This prompts him to acquire a code of higher conduct, which pushes him forward towards progress. The difficulty with the historians is that the moment a concept like 'dharma' is mentioned, they connect it to theology and refuse to examine its impact on humanity. It is the purpose of intellectual history to probe how deep this concept has penetrated in the social behaviour of man. If we talk about humanism, liberalism, eclecticism, unity, diversity, continuity and flexibility as essential features of Indian culture, then you cannot ignore the protoplasm of those which happens to be 'dharma'.

An interpretation of history cannot be adequate unless it acknowledges all the factors in it. An essential factor in Indian history is God, who is regarded as author, producer and actor in history. What 'Brahma' 'Vishnu' and 'Shiva' stand for I need not explain in Annamalainagar. The point is that Nature and human beings are generally recognised as factors in history, and both the World-as-history and the World-as-nature owe their existence to same Creator, which is generally regarded as God. But the reality of God is denied and doubted by the professional historians. They do not ascribe any acts of history to God. As the intellectual historian goes a step deeper than his other comrades, he puts the question, "Is there a Supreme Divine Being? If so, is He involved in human history? If so, how? "The answers he would get would form the content of intellectual history.

Although our literature is replete with assertion that there is God, the professional historian would respond, "I do not know if there is a God". This is a serious evasion of the problem. Ignorance is no excuse in law. If you grill the historian more, he would cry. "What is meant by the term God?" Is it an unknown identity? Vedanta postulates that God is present everywhere. God is the substratum of the entire universe, both animate and inanimate. God is there even within man. You sholud have only the inner eye to see him. Necessary protocol is required to meet him. Purity, sincerity, service, love and devotion are the entry points. Patience, trust, hope, faith and longing act as the passport. Reflection, meditation, prayer, knowledge and enthusiasm serve as introducing agency to the Infinite, Independent, Invisible, the Highest Radiance, the Supreme Joy and the Most Exalted Substance, called God. You would not be able to see Him unless you pass through the security check. We cannot see our own elected Prime Minister unless they search our body lest a dagger be concealed. God is something higher and to see Him, one has to search one's soul. The Security guards check whether you still harbour within you lust, greed, anger, hatred, pride, selfishness and ignorance.

The point a historian has to note is that man in his journey towards progress invented concepts which were all related one with the other in a rational and permanent order to evolve a pattern of society in which he could bring up to surface the best in himself. For this he needed a medium which would be of the highest order, a conceptual framework, undisputed, inexplicable incontrovertible and acceptable to all. The idea of God served that purpose through which the moral code could be enforced. The conditions required to meet God were such as to make the society a lot better, irrespective of the fact whether human soul really meets God or not. What the intellectual historian could do is, keeping aside the religious experience of Godvision, he has to tabulate the impact of those ideas and draw proper conclusions. The impact of God is seen in every sector, in temples, in art, literature, dance, music, painting, sculpture and so on. Because of God, man who is a mixture of Saint and satan, divine and devil, suppressed the lower elements in him and elevated the higher ones in him. The intellectual historian should measure and guage to what extent, to what degree and with what effect this operation has been performed.

We have to accept the fact that religion exists in history as a potent force. It is the belief in God as held in the religions, different from what theologians and philosophers would preach, that concerns the historians. We cannot ignore that individuals believe, not few but many, that they stand in personal relation to God. Religious congregations are not social assemblies to express or cultivate the feelings of 'togetherness' but are meetings to worship God and acknowledge His superiority. The temples, the priests, the rituals and the rites have more significance than more social fellowship. In India greater part of our literature is religious, because God is not with us a distant God. He belongs to our home as well as to our temples. Every Hindu house has a puja room. God is the Chief Guest there whom he worships. As Rabindranath Tagore put it, "In seasons of flowers and fruits, in the coming of the rain, in the fullness of the autumn, we see the hem of His mantle and hear his footsteps . . . We love Him when love is true. In the woman who is good we feel Him, in the man who is true, we know Him; in our children He is born again and again, the Eternal Child. Therefore, religious songs are our love songs, and our domestic occurrences such as the birth of a son, or the coming of a daughter from her husband's house to her parents and her departure again, are woven into our literature as a drama whose counterpart is the Divine".

Nothing could have helped me more to illustrate the point of intellectual history how concepts influence history than to present the most beautiful passage of Tagore. He has drilled into our ears the ramifications of our love for God in our daily life. But the concept of God does not have equal impact in all countries at all times. Despite the profundity of Buddha's urge for right conduct, the concept of God is absent there. The Charvaka philosophy of Hinduism is not enthusiastic about the existence of God. The French Revolutionaries wanted to ban the concept of God, only to be brought back by Napoleon, who thought God was a necessity to act as a safety-valve when tempers rose high. Comte in his theory of three stages pushed God to the infancy of man's culture. But the most vehement attack on God came from Proudhon who regarded God as evil. He says,..."the Christian God is depriving man of his own creative power and precision...the first duty of a free and intelligent man is to chase the idea of God out of mind and conscience incessantly ... we attain to science inspite of Him, to well-being inspite of Him, every progress is a victory in which we crush the deity. By and by man will become the master of creation and the equal of God". Proudhon and his tribe, Comte, Buckle, Darwin, Marx and Bury, felt that "Eternal God and finite man are rivals in an irreconcilable competition, the prize of which is progress".

These thinkers advanced the concept of Naturalism, that only Nature is real. Society acts by spontaneous impulses. It is man's privilege to apprehend fatality as a social instinct. There is constant struggle between man and nature, in which man's intelligence, skill and initiative play a vital role in turning the wheels of history. According to these thinkers Providence of God is nothing but the collective instinct or the ultimate reason of man as social being. Karl Marx, Lenin and the Russian revolutionaries dismissed the idea of God, and called it the figment of man's imagination, a superstition distracting individuals from the real values of life. Humanists recognize no intelligence higher than that manifested by man. They lean heavily on science.

The purpose of this paper is neither to propagate God nor reject God but to reveal how the idea of God has agitated man, and with what results. The rejection of God has resulted in contemporary humanism, a ideological school which says that it stands for th assertion of human dignity, the understanding that n value is greater than man himself, the respect for th labour of man, the faith in the strength and intelli gence of man and the recognition of man's right t free development. Progress according to those wh reject God is not because of the Will and Grace o God, but because of man's consciousness to lin humanist ideals with the objective laws of social development and science. The Communists regard themselves as the exponents of humanism.

The point is that for the understanding of histor the question of the reality of God cannot be avoided The acceptance or non-acceptance of God constitute a radical difference between conceptions of history which is our job to trace. The reality of God exists in religious experience, which we cannot explain to any one who has not felt it, just as we cannot say how sweet is honey unless we taste it. Indian thought acknowledges that God dwells in history. The motive force for historical events is the Will of God. It is universal. It is durable. It eludes all human interference. God is regarded as the creator and sustainer of the physical world. The acceptance of God is not intellectual but religious, on the individual's inner capacity for communion with God. The significance of God lies mainly in moral and religious values. The existence of God is a mystery, but the physical world of nature compels us to believe that the whole phenomena is due to intelligence vastly superior to that of man. Everything in nature is so perfect and flawless, and everything in man is so imperfect and so much to be desired. He built many political institutions, aristocracy, oligarchy, plutocracy, timocracy, democracy, monarchy, tyranny, dictatorship and so on, but nothing seems to work well. Can we say the same thing about what God has done? The cow grazes green grass today and gives white milk tomorrow. Has man done anything equal to that ? Can he make a single blade of grass, which could absorb sun's rays and convert carbon-dioxide into oxygen? Is his computer equal to brain? That is why James Jean says that God is a mathematical necessity. Laws of nature are but the ways in which the Will of God becomes manifest. Science has produced only new dogmas, such as the Nazi dogma and the Communist dogma, which are worse than the religious dogma. Bertrand Russell was jailed for 4½ months in 1918 for his pacifist propaganda. When he arrived at the gate, the Warder asked him his religion. Russell said "Agnostic". The Warder remarked with a sigh, "Well there are many religions, but I suppose they all worship the same od". The jail Warder has surely a point relating to ntellectual history.

From the discussion of the concept of God in istory let us move to something different. Physical spects of civilization, State, administration, instituons, art culture and anything unique are generally ne subject matter of history. What we expect in ntellectual history is interpretative, argumentative, xplanatory and discursive history. Certainties have iven way to probabilities, the absolute to the relative. The whole concept of the nature of human undertanding and knowledge has become more complex nd more subtle. There are subtle concepts in all ctivities of mankind, social institutions, law, trade, ne arts, religion, philosophy, folklore, literature, and o on which a student of intellectual history could xplore and concentrate. History as Bury has said is oncerned with "the constant interaction and reciproity among all the various manifestations of human rain power and human emotion". Our job is to xamine this interaction and reciprocity. I will take few examples from Indian history, first from the nedieval period and then from modern to explain vhat exactly I have in mind to say.

No subject is more sensitive to the Hindus of India s Mahmud of Ghaznavi, and none had given greater atisfaction to the communal Muslims of India. Professor Muhammad Habib made this theme his naiden effort to enter into history, but his treatment vas different from what could be expected of Aligarh f those days. He was bold enough to say, "Islam anctioned neither the vandalism nor the plundering notives of the invader ... It is easy to twist one's onscience, and we know only too well how easy it is o find a religious justification for what people wish to lo from worldly motives." Mahmud had suffered osses in men and money in his campaigns in Central Asia. To satisfy his needs in wealth, he decided to vade India, which would offer him not only gold but lso elephants, so badly needed to crush his adversaies in Central Asia. The easy success and the enornous treasures he got in one campaign lured him gain and again to repeat the performance. The gold nd glory were more potent factors than the *jehad* ry, but the *jehad* cry was needed to stir his ignorant oldiers to ensure victory. Therefore, to say that he ought for Islam is as much a travesty of facts as to ay that the British conquered India to convert its people to Christianity.

Thus, Muhammad Habib was the first historian to present a new concept that Mahmud did the most un-Islamic deed, and that the popular adoration of Muslims that he was a crusader for the Islamic cause is the figment of man's imagination. Habib explained that Islam stands for certain ethico-religious concepts from which greed, lust, aggression, ambition and vandalism are excluded. He pointed out that by the 11th century the spiritual insights of the Prophet's days had all vanished, giving place to vested interests, absolute monarchy and aggressive tendency in political leadership. Mahmud was a replica or pocket edition of the Persian monarchy which had been so strongly condemned by Orthodox Caliphs, particularly the second caliph, Umar. Habib warned Muslims not to regard Mahmud as a hero, not to regard he belongs to Indian history, and not to believe he was Muslim in spirit. He cautioned the Muslims, "Islam's a worst enemies have ever been its own fanatical followers". What we need is a new approach to history from an intellectual angle, and to my mind Habib has just done that. History well used is a blessing; history abused will spell disaster.

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Historians in Prussia of Ranke type unified a divided country into the powerful state of Germany. History with narrow outlook in India divided an unified country. Let us all remember that any shabby treatment of history will be visited by divine punishment.

I would like to use Habib for explaining one more aspect of intellectual history. He says that no country's history has any significance except in the context of world ideas. He holds that our medieval India is neither foreign nor military in character. It was an urban revolution carried out in northern India by the Ghorian Turks who were on the borders of India not outside the geographical limits of the country, and that the political change was merely the substitution of the Ghorian Turks for the "Thakurs" as the governing class. This change of Government led to the enfranchisement of the Indian city workers who were liberated from age-old bondage. This social and economic change helped the Turks both against the foreign and domestic enemies. Inspite of the persistent attacks of the Mongols for three generations, they could not succeed in reducing India, or else what the Huns did in Europe and what the Mongols did to Baghdad in 1258 would have repeated in India. India alone was able to stand against the Mongols. Alongwith the urban revolution, a rural revolution too was brought about during the time of Alauddin Khilji, who relieved the low-caste cultivator from the oppression of the high-caste zamindar. The regular exchange of commodities between town and country was ensured. The role of middle men, zamindars and exploiters was vastly reduced by the economic policy of Alauddin, who did almost the same thing as Mao Tse Tung did recently in China. The backbone of caste-rigidities was broken in India, and this accounts for the continuation of Muslim rule in India.

In South India where the Muslim expansion was checked by Vijayanagar rulers, the same socio-economic changes were taking place, as the Vijayanagar rayas could easily perceive that unless they too kept pace with the changing pattern of the times, their neighbours, the Bahamani Sultans, would have an edge over them. Moreover, a new movement almost a renaissance and reformation, was emerging in the South in the from of *Bhakti-cult*. It levelled down the barriers of caste, creed and class and took the stand on the bedrock of humanity. This new awakening had two revolutionary concepts, love and liberalism. Love united man with God, and liberalism born out of love united man with man. This combination of socio-economic changes with moral fervour in the South made the history of this region more stable, more creative, more peaceful, and more enlightened than what it was in the north. I regard the rise of Bhakti movement in the South as a glorious chapter of Indian history, and that it is a leaf from the intellectual history of our land. Although scholars have thrown enough light on Bhakti movement, but its interpretation from the history angle of socio-economic change under a grand scheme in which the enslaved and the oppressed play a vital role seeking better conditions of life has not been well brought out. Woodrow Wilson is right in saying "Nations are renewed from bottom, not from the top. Everything I know of history, every bit of experience and observation has confirmed me in the conviction that the real wisdom of human life is compounded out of the experience of ordinary men... The great struggling unknown masses of the men who are at the base of everything are the dynamic force that is lifting the levels of society. A nation is as great and only as great as her rank and file". Let us be honest and true to ourselves. Have we reconstructed the history of rank and file of our country in the manner it should be done ?

From the ancient and medieval period let me proceed to say something about modern period. A few of the British historians in the 20th century evinced interest in the life of the people of India. J.N Farquhars's **Modern Religious Movements in India** (1915) is the first of its kind from an English pen. A few others examined Indian issues in the light of the highest currents of European thought following Comte's dictum that history offers limitless scope for the recognisation of the people's life on a sound basis. Sir James F. Stephen published his **liberty, Equality, Fraternity** in 1873 in which he very clearly brought out that the modern democratic State was not a heaven of liberty and equality, but an "all powerful despotism in the hands of a gifted minority, and that the Englishmen who were unwilling to concede home rule to Ireland, their next door neighbour, would be much less willing to part power in India". Sir Henry Maine stood for the historicity of ideas that the present is the inevitable result or outcome of the past. These historians presented the concepts that the strong were always destined to rule, that modern Governments compel people to be submissive, that military strength and economic power offer no alternative to people except to settle their differences through counting of heads rather than breaking of heads, and that the ideal of happiness is not a constant concept but a fluctuating one from time to time. They said that the British who were few in number, foreign in race, alien in culture, language and outlook have yet a right to rule over India, because they have a mission in life, and that is to implement the ideal happiness. Although this ideal based on materiam may not fit into Indian ideal of happiness, they ought that the rule of law and the use of Governental machinery to improve socio-economic condions together with peace and order in the land were ough justifications for the perpetuation of British le.

These scholars presented some other interesting oncepts. They held the view that the Sanskrit lanuage was a member of an Aryan family of languages, e village community in India was a lagacy of the ryan institution, that India was a repository of ncient usages, a museum of languages and a gallery ifferent systems of philosophy. More important was e concept that India could be of great help in underanding the Europe of the distant past. Max Muller, ho had settled down in Oxford was in the vanguard of ose who argued that Europe owed a debt of gratiude to India, and that Britain was bound in a spirial bond with India, which was centuries old unlike e political relationship which was only of recent mes. In other words, both the English people and e Indians had a common parentage, and belonged to e same Aryan stock. However, India had ceased to e progressive, and the Europeans first through the Greeks, then the Romans, the Germans, he French and lately the English had gone on mainaining the principle of progress which the English were ow eager to communicate to India. "We did not reate it. We deserve no special credit for it... But we ave received it, and as we have received it so we shall ass it on". These thinkers posed the question why the ryans did not excite nationalism in India, whereas hey did it in the west. W.W. Hunter's answer to this vas that the social institution of caste rigidity stood in he way. He explained that in Bengal the Brahminical lass threw all manual labour on to the lowest caste nd itself became so weak as to permit more vigorous eople to invade and dominate India. Brahminical riesthood destroyed political loyalties, promoted relious superstition, and facilitated foreign attacks. We ertainly find fascinating thoughts which should provoke s to examine such facts, which would form the core of ntellectual history.

Alfered Lyall also has something to offer to this ategory of thought. His answer to the question why ndia so easily succumbed to British attack was not so nuch the disunity that prevailed nor the absence of ational feelings at the time, but the failure to develop ny other principle of Government than personal desotism. Whereas Greece experimented all sorts of overnment from aristocracy to democracy, and Rome had its republics, India did not know any other form of Government than monarchy. All Governments in India tended to be unwieldy, over-centralized, top-heavy and dependent on the military leader. Political confusion in India did not permit material and mental development after Harsha's period. The influence of religion on politics was not put down in India, as it was done in England under the Tudors. Consequently primitive conceptions and practices continued in India alongwith highest metaphysical concepts, but these concepts were so abstract that only a microscopic section could understand. Whereas Rome had crushed all other religions in the interest of Christianity, and Islamic Empire had done that in the Middle East in the interest of Islam, no such attempt was made in India even when the Muslims gained political ascendency. Finally, Lyall explained that the British conquest of India lay in the logic of history, for ever since the time of Alexander, there had been a steady push of the westerners towards the East, whether they were the Greeks, the Romans, the Arabs, the Crusaders, the Turks, the Persians or the Afghans. The other nations to join the race were the Portuguese, the Dutch, the French and the English, and among them the English were the most adroit to win the race. Lyall built up the theory of prennial contest between the East and the West.

Lyall offered a few more new concepts. Over-centralised Governments were sure to fall sooner or later. The British were soon reaching that point, and hence their fate would not be much different from their predecessors. The remedy he suggested was decentralization and local self-Government which Ripon had recommended. The princely States were to be retained as safety valves and as citadel of conservatism. He drew proper conclusions from Dalhousie's policy. Layall said that the British had to learn a lesson from Akbar who had conquered only that much as to make his power paramount, but Aurangzeb's expansionist policy hastened his doom.

One more example could be cited from the contemporary scene to illustrate the need for intellectual history. Bjorne Hettne of Swedish Academy in his book **Political Economy of a Princely State** has beautifully summed up the essence of the entire British Policy towards Indian States in one word, 'penetration'. What the resourceful imperialists had done was a stroke of genius. They would appoint a 'Diwan' or Chief Minister to a native State, not from that region, but from outside; not a raw recruit, but one who had been long in the service of the British; not one from among the Europeans but among the Indians; and not for a long period, but just for a a tenure. This person in whom the English had great trust would be brought so close to the Raja, that the act was as if the 'penetration' to power base. Once the adviser to the Raja was a stooge, the rest of the game was easy. This is exactly what happened when Rangacharlu. Seshadri Iyer and Anand Rao, all from Madras service, were injected to the power-base in Mysore. Thought process comes out with interesting concepts to explain political phenomenon. It was Vishweshwaraiah who perceived the deep game, and advised the Raja for a shift in policy. It was too much for the English to put up with persons of such perceptions, who would not act as puppets. Vishweshwaraiah was removed. To play the game of penetration yet another pawn was used. The bogey of Brahmin-non-Brahmin was raised in Mysore under the plea of social justice. It was argued that 8% Brahmins cannot monopolise all power. The point is that reflective search in history would yield very useful concepts which could form the data for intellectual history.

Before I conclude I would like to draw your attention to a great thinker of our times, whose contributions to mother India deserve to be inscribed in letters of gold. My reference is to Pandit Jawaharlal Nehru, not a doyen of historians, but the darling of India. I am not concerned with his politics here, although in my presidential address (47th Session of Indian History Congress, 9 Oct. 1986) in Srinagar I made a reference to him stating that in the post independence era "a super craftsman in ideas conceived of a policy whereby India, neither commanding the military power of America nor the economic strength of Russia would command the respect, of both, and act as the most decisive factor in world affairs". A new concept of balancing force, deeply rooted in the middle path of Buddha, a sort of neutrality, not of the passive Swiss type, but of dynamic non-aligned variety, a third alternative not to barter away one's self respect by joining either of the military blocks, but to uphold moral vigour by supporting right causes through peaceful yet effective means were all the brain-waves of one great soul, who brought such glory to India. We, the historians could take a little pride that Panditji possessed the historical vision, had absorbed the historical essence, and had been a path-finder of a trend in historical thinking. Who would not be bewitched by his bunch of historical letters to his equally worthy daughter, by his wide sweep of world forces at work, by his firm grasp of human values, and by his discovery of those hidden aspects of our history which the professional historians could hardly perceive? My plea is that if models are required for intellectual history of India, let that be the **Discovery of India** by Panditji. His approach to history is not that of an idealist or materialist but that of a scientific humanist. He brings down the conflict between humanism and scientific spirit, and integrates science and culture synthesising the two to evolve the finer element in man. His entire social philosophy revolves round the study of history, and the emergence of an integrated historical view enlightening us with new meanings in history. His ideas on politics and problems of life, his method of resolving conflicts inherent in human nature, and his leanings on scientific humanism have brought a refreshing breeze in our intellectual historiography. Panditji has looked beyond Government to people, beyond laws to righteousness, beyond religion to spirituality, and has thrown searching light on intellectual, moral, material and emotional aspects of human life and society, and this is what is expected of an intellectual historian.

While summing up may I say that the greatness of India lies in its power of absorption of ideas from any quarter, and ideas from the backbone of intellectual history, which is an attempt to expose man's wisdom. Ideas become pulsating current, giving life to history, which reflects the genius of a people. We need to write that kind of history which would enlighten us on the processes of history, on the causes, conditions, character and nature of events, and on the knowledge, skill and wisdom of the people. We have rich material to reflect upon. The advances in inventions, the novelty of political experiments, the pattern of social change, the ramifications of economic structure, the intellectual and moral heights of religions, the masterpieces of art, literature, philosophy and science, for which India is so well-known, all offer rich material to a student of intellectual history. Let us all hope

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that India which has been a power house of ideas will generate the intellectuals who would comprehend the nature and meaning of the problems. Our historians have remained too long in descriptive catalogue of men and events without analysing the impact of ideological or moral values, psychological or philosophical concepts, social or economic forces, or material or physical factors on the flow of history. Once we start analysing such concepts, we would land on intellectual history.

In conclusion I would say that the relation between creative ideas and their impact on society results in intellectual history. It concerns itself with the examination of what men say, what they think and what goes on in their mind. Intellectual history is not merely a summary or synthesis of philosophy, literature. religion, science and arts, but it is "the cartography of ideas" whereby an attempt is made to trace and understand the impact of those ideas on society. At its narrowest, intellectual history tells us who produced what intellectual or cultural attainments, where, when and how. At its broadest, it comes close to a compendium of man's knowledge about culture. Intellectual history seeks to explain the relation among creative ideas and the effect they bring to bear upon non-intellectual factors. The intellectual historian is bound to be a thinker rather than a story-teller. In the United States intellectual history has become very popular acting as a bridge between the historian and the practitioner of social sciences. In England, France and Germany which have produced Buckle, Toynbee, Comte, Hegel, Marx and Spengler, it has attained high degree of proficiency, and these historians are called meta-historians. It is very surprising that India which is a home of philosophy, has yet to produce an intellectual historian of high order. If history is the cause of a nation's persistent identity, it could do so only through a chain of ideas, the substance of intellectual history. It is only through the proper study of intellectual history we can join the wisdom of Solomon to the counsel of Socrates. □

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Agricultural Development in Gujarat

Dr. N.S. Randhawa, Director General, Indian Council of Agricultural Research and Secretary, Department of Agricultural Research and Education, Government of India delivered the Convocation Address at the Thirteenth Annual Convocation of the Gujarat Agricultural University, Sardar Krushi Nagar. Dr. Randhawa reviewed the progress of agriculture in Gujarat in the backdrop of the agricultural development in India. He was highly appreciative of the significant role played by the Gujarat Agricultural University in bringing about this transformation and hoped that the university will serve the farmers of Gujarat more effectively and efficiently in years to come. Excerpts :

About 15 years ago, the teaching, research and extension education functions were transferred to your University by Agriculture & Animal Husbandry Departments and the Institute of Agriculture, Anand. Since then, the Gujarat Agricultural University has made significant contributions to the agricultural development of your State and the country.

Since independence, the initiation of the Agricultural Universities in our country has been one of the most significant educational developments. The integrated model of education, research and extension education has successfully responded to the requirements of the Society. Even before the establishment of the Gujarat Agricultural University, the three Agricultural Colleges at Anand, Junagarh and Navsari, the College of Dairy Science and the Gujarat College of Veterinary Science and Animal Husbandry at Anand had made significant contributions in developing agriculture, animal husbandry and dairy not only in Gujarat but in the whole country.

Indian Agriculture

India is a vast country with variegated natural endowments such as soil, climate, flora and fauna. This diversity has made Indian agriculture one of the most difficult yet most promising propositions in the world. In spite of fluctuations in the agricultural destiny of our country, we have been progressively moving up in foodgrain production. From 51 million tonnes in 1950-51, the Indian farmers are producing around 150.46 million tonnes in 1985-86. This growth trend in food production indicates massive application of science and technology in the field of agriculture and also improvement in our capacity to withstand repeated aberrations in weather.

Our agricultural growth has two dimensions—horizontal and vertical. During the early phase of our nationhood, efforts were made to enhance food production by increasing the area under cultivation. It increased from 119 million hectares in 1950-51 to 143 million hectares in 1985-86. There is a distant possibility of increasing this area beyond 150 million hectares by the turn of the century.

The vertical growth in productivity was made possible through the application of science and technology which was reflected in the development of high yielding varieties, increased use of irrigation water, chemical fertilizers, plant protection chemicals and efficient management of these resources. The net area under irrigation increased from about 21 million hectares in 1950-51 to about 42 million hectares in 1983-84 and we expect to achieve a target of around 100 million hectares of gross irrigated area by 2000 A.D. Similarly, the fertilizer nutrient consumption also increased from paltry 0.1 m tons in 1950-51 to over 9.0 m tons in 1986-87.

In spite of these laudable achievements in the field of agriculture, our future challenges are great. Our foodgrain requirement for a projected population of about one billion by the turn of the century has been estimated at 225-245 m tons. Our demands on oilseeds and other agricultural products and raw materials such as fibre, fodder, fuel and timber would be tremendous. What is our plan to achieve these targets so that we can off-set hunger and poverty is a vital question which needs our utmost attention.

Agriculture in Gujarat

The farmers in Gujarat cultivate 107.6 lakh ha of land of which about 80 per cent is rainfed. Out of the total area under irrigation only 35 per cent area receives assured irrigation. Surprisingly, only 10.4 per cent of the land holdings fall under this category. The Gujarati farmers have kept pace with the agricultural development of the country. From 1.7 m tons of foodgrains during 1949-51, the production has gradually increased to 3.7 m tons during 1984-85. The successes in the case of castor, tobacco, cotton and sugarcane have been very inspiring.

Unfortunately, in the last couple of years, Gujarat is facing acute drought conditions which have adversely affected the production levels of many of these crops.

The production of pearl-millet in the year 1985-86 was only 6.3 lakh tonnes as against 15.3 lakh tonnes in the year 1984-85. Similarly there was a shortfall of 1.4 lakh tonnes in the production of sorghum during the same period. The production of paddy in 1985-86 was nearly half of the production level of 8.3 lakh tonnes produced in the year 1984-85. The maximum shortfall was noticed in maize production where only 1.1 lakh tonnes was produced in the year 1985-86 as against 3.8 lakh tonnes in 1984-85. Drastic reductions were also noticed in the production of wheat, pulses and oilseeds. In case of oilseeds, while the area in Gujarat remained the same, the productivity fell from 893 kg/ha in 1983-84 to 830 kg/ha in 1984-85 and a further steep fall to 374 kg/ha in 1985-86. Gujarat being a predominantly rainfed state cannot afford such wild fluctuations in productivity of its field crops. It is time that we had a serious look at our priorities in the R & D support to agriculture. We must improve our preparedness against such contingencies. Currently there are centres of the All India Coordinated Research Project on Dryland Agriculture at Rajkot and Dantiwada engaged in Dryland Research since 1971. The research efforts on Dryland Agriculture are not commensurate with the magnitude of the area and will have to be strengthened considerably.

Irrigation Research

In order to improve and stabilize agricultural production in the country, we have been making massive investments on the major, medium and minor irrigation projects. Unfortunately, the projected gains in most of these projects, particularly medium and major, have been falling short of the set targets. In this connection, I wish to refer to the irrigation projects like Okai-Kakrapar and Mahi-Kadana which had been commissioned during late 50s and early 60s and are still posing major problems of efficient water management. We must become wiser from these past failure. I hope adequate precautions have been taken while developing the three phases of the Narmada project. I am happy to know that the scientists have already worked out water and irrigation schedules of important crops of Gujarat and have also worked out fertilizer-irrigation interaction for various crops. We must strengthen our research efforts especially to improve soil physical conditions, drainage needs, reduction of seepage loss, cropping sequences under water-stress conditions, etc. The Operational Research Projects on Watershed Management being implemented in Gujarat should help the scientists in developing useful management and soil conservation technologies.

In the case of minor irrigation, we have to be extra watchful about over-exploitation of these resources especially in the coastal areas. We had already faced a major problem of the intrusion of sea water thereby converting highly productive areas into barren land. The Central Soil Salinity Research Institute, Karnal, has established a Research Centre in Kutch especially to work on incursion of sea water and coastal salinity. This centre aims at developing salt-resistant varieties of various crops and trees and will underake investigations to check the incursion of sea water by mechanical means. The Central Arid Zone Research Institute has also established a Research Station at Bhuj to work on grass-land development, livestock management, problem of salinity and incursion in Rann of Kutch.

Agricultural Engineering

It is rightly mentioned that next revolution will come in Indian agriculture by increased use of farm implements. Unfortunately, in our country, the use of new farm implements is not very popular. There seems to be some imbalance between research and development in this sphere. In crop-intensive areas, all efforts should be made to develop farm implements which could be made available to small and marginal farmers. Similar research efforts are required in developing renewable energy sources which could be put to use in agriculture and agro-based industries. A project for this purpose has recently been sanctioned in Gujarat which, I hope, would start functioning soon. I am aware of some organizations in Gujarat which are involved in carrying out field surveys for identifying potential solar energy applications and educate people about various technological options of harnessing of solar energy. We need more such institutions to work in this area so that the technology for the use of non-conventional sources of energy is crystallized and made usable.

Research Achievements

It is indeed inspiring to hear that the Gujarat Agricultural University has been providing strong research support to step up food production in the State. Development of 105 improved varieties of different crops is a commendable achievement. Several other researches in the fields of agronomy, soil science and plant protection hold a bright future for Gujarat agriculture. Researches in crop husbandry in all the major crops like cereals, pulses, millets, cotton, tobacco, oilseeds, sugarcane, fruits and vegetables, forage crops, spices and medicinal plants helped the Gujarat farmers increase productivity per unit area.

Oilseed Mission

Although I have already highlighted the importance of oilseed crops in Gujarat, I wish to re-emphasize the importance of increasing oilseed production in Gujarat because your State ranks second in the area covered under oilseed production in the country and ranks first in the production of oilseeds. It has been estimated that in Gujarat oilseeds are grown on about 26 lakh ha which is over 14 per cent of the total area under oilseeds in the country. The farmers produce over 21 lakh metric tonnes of oilseeds which is nearly 20 per cent of the total oilseed production in the country. During the period 1949-50 to 1984-85, the area under oilseeds in Gujarat had expanded by 368 per cent and the production had increased by 898 per cent. The productivity during this period, however, increased by 233 per cent.

At the national level, to increase the oilseed production in the country, a special Oilseed Mission has been established to increase production and productivity of oilseed crops in 180 districts especially selected for intensive efforts. Other objectives of the Mission are to develop location-specific technologies for each oilseed crop to produce adequate quantities of seeds of different categories, to undertake research in modernising oilseed technology and to create awareness about the new technologies in selected areas through Transfer of Technology Projects. The training of developmental workers in the latest oilseed production technologies and modernising the processing technology has also been included in the Oilseed Mission. The Mission has specially selected crops like groundnut, rapeseed, mustard, soyabean, sunflower, safflower, linseed, sesamum, castor and other non-conventional edible and non-edible oilseeds for special attention. I am sure, the Gujarat Agricultural University and the State Department of Agriculture will make joint efforts to implement the Oilseed Mission activities in the State. I believe, the success of the Oilseed Mission depends upon the success you achieve on the farmers' fields in Gujarat.

Horticultural Development

I wish to specially emphasize the importance of strengthening research in horticultural crops in Gujarat. Iam told that horticultural crops cover about 65,000 ha in the State; the importance amongst them are mango, chiku (Sapota), banana, **ber** (**Zizyphus**) and dates. The hybrid mangoes produced by your University, namely, Neelphanso, Neelesan and Nileleshwari, have been released for cultivation to the farmers. I wish the University could make special efforts to supply the grafts of these varieties to the cultivators. Similarly, another important fruit crop which needs very special attention is the *ber* which has lot of potentiality in the semi-arid regions of the State.

Another important aspect of horticultural development is the diversification of farming in western tribal areas of Gujarat. Technologies are available by which marginal lands have been converted into orchards of *ber*, citrus etc. The Regional Research Station of the Indian Institute of Horticultural Research located at Godhra has been working on these lines. Recognizing the potentiality of horti-silvi-pastoral system, ICAR has sanctioned coordinated research project centres of fruits and agro-forestry for GAU. We must take full advantage of these S&T centres. I am told there is a good collection of varieties of several fruit crops on your research farms. However, there is a need for distribution of these elite plant materials to the farmers.

Potato is another crop in Gujarat which can be a source of inspiration to the rest of the country. Cultivated on 10.6 thousand ha in Gujarat, it has a productivity level of 28.2 tonnes per ha which is the highest in the country. This is due to favourable soil and photoperiod conditions in the State. Recently, the scientists have recommended the use of 'true patato seed' (TPS) which takes care of the problem of bulk storage etc. due to which the production suffers. This technology has been found to be useful in Gujarat in multi-location testing and has resulted in achieving as high as 36 tonnes/ha on farmers' fields.

Livestock Production

Gujarat is one of the most important States for livestock production in the North-Western Region of the country. The current population according to provisional 1982 census is 7 million cattle, 4.4 m buffaloes, 2.4 m sheep, 3.3 m goats and 3.6 m poultry. The whole state is essentially arid and semi-arid and livestock are an important source of income and employment for the rural communities. Gujarat is the home of three important breeds of buffaloes viz. **Jaffarabadi, Mehsana** and **Surti** as well as home of the two important breeds of cattle viz. **Kankrej** an important draft breed, and **Gir**, an important dairy breed. This is also the State which has contributed to the white revolution in the country. The first dairy cooperative, the Anand Milk Producers' Union Ltd. (AMUL), was established in this state which is also known as "**Kaira Milk Producers' Cooperative**". This model has been adopted throughout the country under Operation Flood, which is now running in the third phase and has also been adopted as a model for dairy development in the greater part of the developing world. The state also has important breeds of sheep and goat, especially **Patanwadi** which produces excellent carpet quality wool. **Marwari** another good carpet wool breed, which comprises 40% of the sheep population in North-Western Region of the country. The **Kutchi** and **Surti** are also important meat and dairy breeds of goats in the state. **Kathiawadi** horses and **Kutchi** camel comprise important breeds of these two species.

The Gujarat Agricultural University has inherited the College of Veterinary Science and College of

Dairy Science at Anand. It has now established another veterinary college at Dantiwada. I am happy that excellent facilities for livestock research have been developed by the University. The ICAR has also been supporting animal science research through its coordinated research projects and ad-hoc schemes. These relate to improvement of **Surti** buffaloes especially reproduction aspects, improvement of sheep for fine wool production through crossing with exotic fine breeds **Merino** and **Rambouillet** as well as improvement of **Patanwadi** sheep for superior carpet wool production. The Government of India has established a Central Buffalo Breeding Farm at Dharmod which is undertaking improvement **Surti** breed through selection and is making available superior germplasm of this breed. The ICAR is also contemplating to establish a Regional Station of the Central Institute for Research on Buffaloes in Gujarat.

The Council is also supporting through ad-hoc schemes some aspects on improvement of camel. The National Research Centre on Equines will also undertake research for improvement of **Kathiawadi** horses. The National Research Centre on Camel located at Bikaner, in addition to studies on the important breeds of camels of Rajasthan viz. **Bikaneri** and **Marwari**, is also studying the problems of improvement of workability of **Kutchi** camels.

The All India Coordinated Research Project on Poulty for eggs which has been uptill now used as a testing station will now be undertaking research on improvement of poultry for egg production through selection. Another centre of the All India Coordinated Research Project on Determining Nutritional Requirements of High Egg-Producing strains of Poultry will be located here.

There has been a demand that the University should take up research programmes on the improvement of two breeds of buffaloes viz. **Jaffarabadi** and **Mehsana** and the ICAR should provide support for the same. I understand that the University has a small excellent herd of **Jaffarabadi** buffaloes at Junagarh. We had suggested to the University that it may try to combine a number of other institutional herds of **Jaffarabadi** buffaloes of even the private breeders who have large number of **Jaffarabadi** buffaloes and conduct genetic studies for the improvement of this breed and undertake progeny testing of bulls. Similarly, for **Mehsana** we had suggested that the Mehsana Dairy Cooperative which is undertaking a programme for improvement of this breed could undertake the genetic studies on **Mehsana** and further improve it through selection based on the progeny performance of the sires. The University may maintain only the bulls of these breeds and make available the frozen semen to the Cooperative Unions for breeding of the buffaloes and the production data on these buffaloes be made available to the University for genetic studies and progeny testing of bulls and their subsequent selection.

Fisheries Research & Development

Gujarat is one of the foremost states in terms of fishery potential in the country. With one of the longest coastlines, the marine production in Gujarat during 1985-86 was only 2.87 lakh tons. Similarly, the Rann of Kutch and the remaining coastal area of the state with highest tidal amplitude could be one of the highly potential brackishwater fish/prawn farming areas. Gujarat has taken due note of its marine potential and has taken steps towards mechanisation/modernisation of fishing fleet with appropriate involvement of pertinent agencies duly constituted for the purpose. The Government has supported the establishment of fishery shore infrastructure in the form of well-equipped fishery harbours both with Central Government funds as well as with World Bank assistance. Nevertheless, the state needs to consider strengthening the deep sea fishery industry to exploit the still larger fish potential over the highly productive continental shelf. The R & D support provided by the ICAR Institutes such as CMFRI and CIFT could be effectively used in supporting the ever-growing harvesting activity in the state with appropriate technology for post-harvest handling of the commodity. More than 4120 traditional boats, and 2900 mechanised boats operated by active fishermen belonging to the community with a population of about 1.5 lakhs require technology support in terms of upgradation of information, better processing technology for value-added products and sense of certainty in terms of projected marine fish stock potential. The Agricultural University could undertake a major responsibility in participating in these programmes.

Gujarat also has considerable inland fishery potential. While the development of reservoir fishery through the participation of ICAR Institutes at Ukai has raised the fish production from 50 to 75 kg/ha, the rural aqua-culture has also made remarkable progress with the transfer of composite fish culture technology. However, the transfer of technology in the field of fish seed production and table size fish production is still short of the desired level. The ICAR will be very happy to support the agricultural university to take up some research programmes for supporting the aqua-culture activity in the state. The meagre fish production of about 25,000 tons during 1984-85 from inland sector also calls for strengthening the area in terms of enlarged extension activities.

Strengthening Agricultural Education & Research

The GAU is one of the multi-campus universities in the country with 4 campuses, 9 constituent colleges; agricultural schools, training institutions etc. One of the problems in such multi-campus universities is the uneven development and growth of institutions. Although financial constraints effect the growth of different campuses, I feel the University should ensure balanced distribution of resources to all the campuses. There is also a need for strengthening education and research facilities in the field of biotechnology/genetic engineering, agricultural engineering, water use and conservation, home science, etc. We should take advantage of the National Agricultural Research Projects (NARP) in eliminating these imbalances. The NARP has entered the Second Phase in the state. The ICAR has sanctioned 15 NARP sub-projects with an outlay of Rs. 5.05 crores. I am happy to note that at present the NARP projects are in operation in 9 locations in three selected agro-climatic zones of Junagarh, Anand and Navsari. I hope these projects have assisted the university in strengthening its research capabilities to meet research demands in different agro-ecological regions of the state.

I am informed that the University has fiftyfive research stations dispersed in various parts of the state. During the second phase of the NARP we should endeavour to consolidate and strengthen our research efforts at these stations. In view of limitation of resources, some of these could be phased out. During this phase, the scope of the NARP has been enlarged to include Horticultural and Animal Husbandry. This will improve our capability to diversify agriculture in Gujarat.

Extension Education

Besides conducting research, it is essential that the useful research findings should be made available to the farmers quickly to help them solve their problems. It is heartening to note that the University has been conducting various extension education programmes of the ICAR, the State Department of Agriculture, Animal Husbandry and Panchayats. The farm advisory and training activities of the University are one of the very well-developed wings of the University. I wish to plead to the scientists to make maximum use of these extension programmes by feeding their technologies through the extension system and develop a strong, two-way channel for getting feed-back from the fields. The National Demonstrations Project, the Operational Research Projects, the Krishi Vigyan Kendras and the Lab-to-Land programme of the ICAR are important links between the scientists and farmers. The linkages between these extension activities of the University and the on-going extension programmes of the State Agricultural Department are very vital. The University Extension System should play a complementary role to the main extension system of the State Government. This is important to avoid duplication of extension efforts at different levels.

Agricultural Planning

It has been rightly mentioned that many of our problems in agricultural development are related to management of resources including human resource. We need planning in all our developmental efforts including the development of Agricultural Universities. I am happy to know that the GAU has taken a lead in constituting a special University-level Planning Committee to take stock of the resource position and develop short and long-term strategies for balanced growth of research, education and extension education activities in the University.

The GAU has been implementing about 325 plan, non-plan, ICAR and other schemes. There was a provision of Rs. 30.03 crore during the year 1986-87. I am told, due to financial constraints, the University has so far received only 43 per cent of the total Seventh Plan grant against 60 per cent which should have been made available by the end of the third year of the Seventh Plan. Such financial constraints put limits to the research, education and extension activities because a large part of the grants meant for these purposes have to be diverted for developmental activities like construction of quarters, development of hostel facilities, farms and farm roads, etc. Gujarat, being the most progressive state, would not want its agriculture to suffer for want of adequate S & T support. I would request all those who matter, to kindly pay special attention to ensure the release of well-considered and accepted demands of the University during the Seventh Plan. Meanwhile, the University should take steps to re-define responsibilities and fix up priorities so that important activities do not suffer for want of resources.

A major bottleneck in the effective implementation of projects has been the inadequacy of technical man-power policy and provision of some incentives to maintain a balance of manpower distribution amongst teaching, research and extension education activities.

I am happy to know that the GAU proposes, to organize a seminar on "**GAU IN 2005 AD**" which will provide the University with an opportunity to put itself on more sound footing so that it could serve the farmers of Gujarat more effectively and efficiently. □

Rural Medical Education Centre

Taking a hint from the Foundation for Research in Community Health (FRCH) in Bombay, a few graduates of Bombay University have started a rural medical education centre in drought-hit Purandar Taluka situated at 50 kms south west of Pune.

Known as Arogya Shikshan Kendra, the Centre aims at bringing health awareness among people in 18 villages around Malshiras in the next five years. The Centre would also undertake research work on the medical needs of the rural populace, provide cheaper and simpler alternatives to medicines and propagate hygiene and preventive medicine.

The Centre will study environmental factors leading to health problems and conduct education programmes in collaboration with local primary health centres in schools and adult literacy classes to raise health awareness among the masses. Suitable audio-visual presentations would be created for use of village-level Arogya mandals and creches.

Research on Ganga Pollution

Fourteen universities in the Ganga basin are conducting a coordinated research programme designed to draw a biological profile of the river and determine the causes of its distortion. The research will help in biomonitoring, biological conservation, eco-toxicological studies, propagation of macrophytes on the river banks and virological as well as bacteriological studies of the river.

Each of the participating universities has been assigned a particular stretch of the river to cover it from its origin to the tidal portion. All universities will conduct a core research programme comprising the assessment of physical and chemical characteristics of the Ganga water. They have also been assigned special projects according to their speciality like hydrogeological study (Banaras Hindu University), physico-chemical study (DBS college. Kanpur), biotic communities and productivity (University of Kalyani), taxonomical studies of bacteria (Aligarh Muslim University), instrumentation for pollution monitoring (Jadavpur University), etc.

The programme, initiated by the Planning Commission in 1981, is now being administered by the Ganga Project Directorate and is expected to be completed by March 1988.

Alcohol from Agricultural Wastes

Biochemical engineers at the Indian Institute of Technology (IIT) in Delhi have found a way to turn agricultural wastes like rice straw into alcohol. Indian stocks of such wastes are enormous and industrial adoption of the new technique will help boost the production of ethyl alcohol (ethanol) in the country. This was revealed by scientists of the IIT Biochemical Engineering Research Centre (BERC) at a seminar held in Delhi recently. The seminar brought together scientists and industrial representatives to discuss different aspects of the new technology and to plan strategies to promote it among the industries.

All the athanol currently produced in the country—about 600 million litres annually, is extracted from molasses—a byproduct of the sugar industry. Meanwhile, hundreds of tonnes of agricultural wastes are either used as cattle fodder or simply burnt away even though they contain lignocellulos a substance from which, the IIT tests have shown, ethanol can be efficiently produced.

Besides forming a key ingredient of alcohol, ethanol is also taken as starting point for hundreds of industrial compounds. "You can make almost any useful organic compound with ethanol", BERC Association Professor Subhash Chand said.

Ethanol production through wastes would also reduce dependence on crude oil for the manufacture of many industrial compounds, Dr. Chand said. Both ethanol and crude oil are currently used in the manufacture of a large number of industrial compounds. But because of the low production of ethanol, such industries now have to depend more on the oil.

NIMHANS & WHO Collaborate

The National Institute of Mental Health and Neuro-Science (NIMHANS) has been launched as a W.H.O. collaborating centre for work leading to the development of a "mental health kit." Recently inaugurated by the Karnataka Chief Minister, Shri Ramakrishna Hegde, the Centre will also undertake investigations aimed at the prevention of mental disorders and disturbances.

Some of the areas of work to be undertaken by NIMHANS relate to optimum psychological development of children, indicators of mental health, identification of psychological problems presenting themselves in Primary Health Centres, assessment of health damage resulting from alcohol use, and an epidemiological study in Bangalore City of head injuries resulting from road accidents.

"No mental health programme can be taken up by psychologists alone," W.HO. Mental Health Division Director Dr. Norman Sartorius said. "It should be the concern of society too." Pointing out that 300million people in the world suffer from mental disorders, he said a new aspect of mental health is the development of psycho-social treatment.

He said the new line of treatment resulted from various modern developments that had led to the dehumanisation of medicine. "The soil has gone out of the medical profession," he said. Dr. Sartorius attributed the phenomenon to rapid urbanisation, sweeping diseases, change in the family structure and industrialisation.

The Collaboration Centre will be headed by Dr. G.N. Narayana Reddy, Director, NIMHANS.

Logo Design Competition

The University of Roorkee's Science & Technology Entrepreneurship Park has invited entries from interested persons for the design of a Logo for "Science and Technology Entrepreneur's Parks (STEP). The aims and objectives of STEP are : (a) To undertake R&D activities; (b) To act as an interface between University, R&D Organisation and industry; (c) To promote Enterpreneurship; and (d) To encourage High Technology.

The design should be in black & white in the size 15 cm. x 15 cm. Individuals can send any number of entries, but each entry should have the name and address of the designer given on the back side of the sheet on which Logo is designed.

A First Prize of Rs. Rs.250/- and Certificate of Merit and a Second Prize of Rs. 100/- and Certificate of Merit will be awarded to the entries adjudged first and second respectively. In addition two Consolation Prizes in the shape of Certificates of Merit would also be offered.

The entries will be received in the office of Dr. M.P. Jain, Professor, Industrial Cell, University of Roorkee, Roorkee by 5 p.m. on 24th September, 1987.

BAU Adopts New Pattern of Evaluation

The Academic Council of the Birsa Agricultural University has decided to introduce semester system with external evaluation instead of present trimester system of evaluation. Under the new pattern, 50 per cent marks of theory papers would be awarded by external examiners while the remaining 50 per cent marks of practical mid term examination and quiz by the internal examiners. The university has also decided to introduce ten-point grading instead of earlier four-point grading system.

Biotechnology Information Network

The Government of India proposes to set up a Rs. 13-crore computer-based biotechnology information network at eight different places in the country. This was announced by Mr. Shivraj Patil, Union Minister of State for Defence, in Rajya Sabha recently. The Minister said that the emphasis would initially be on health information. It would cover space, agriculture and industry subsequently. The network would also, he added, develop software packages specific to users' needs and conduct training courses for manpower development.

Staff College for AMU

Aligarh Muslim University is setting up an academic staff college for new lecturers and those in service. To be started at the instance of the University Grants Commission the college would initially train 20 lecturers.

Prof. Syed Hashim Ali, Vice-Chancellor, said during the 1987-88 academic year, only two academic staff orientation courses, each of eight weeks duration, would be organised. The first such course will be held during October-November and the second during February-March, 1988. He said once fully established, the college would train 50 to 60 lecturers.

SCI Maritime Institute

The Maritime Training Institute of the Shipping Corporation of India (SCI) at Powai, near Bombay, will start functioning towards the year-end. Inaugurating the "general shipping management programme" of the SCI, Mr. K.T. Kothari, Executive Director (Finance) of the Corporation said the institute would provide various types of in-house training to the maritime personnel for efficient management and operation of the fleet. He said it would continually update the knowledge and skill of its manpower in keeping with technological progress and changes in maritime transportation, development of human resource and managerial skills applicable to maritime transportation and conduct research and development in the economies and technologies connected with maritime transportation and allied activities.

News from Agril. Varsities

Question Banks for Agricultural Sciences

Dr. A. Appa Rao, Vice-Chancellor, Andhra Pradesh Agricultural University (APAU) said, Evaluation is a part of teaching. The required attention has not been paid all along to this important aspect of evaluation. Teachers have been examining the students in a routine fashion. There is need to bring in changes in the evaluation systems in the universities. Dr. Rao was inaugurating the three-day workshop on Question Banks for Agricultural Sciences organised by the Association of Indian Universities (AIU) at the Agricultural College, Rajendranagar, on August 18, 1987.

Reviewing the present systems of examinations in the traditional and agricultural universities in the country, Dr. Appa Rao lauded the efforts of the AIU to drive home the new concept of question banks for agricultural sciences and said that the agricultural universities have been involving themselves in the new methods of evaluation but training in this aspect of developing questions is necessary.

Prof. V. Natarajan, Project Director (Exams), AIU in his keynote address said that the worksohp was an effort to standardize the process of examinations. He viewed the development of question banks in various subjects and disciplines as a device to regulate and quicken the process of learning. He said to be able to ask the right kind of questions requires a thorough understanding of the subject matter and hoped that the exercise would prove quite fruitful both to the teachers and the taught.

Animal Nutrition Complex at PAU

Dr. A. K. Chatterjee, Animal Husbandry Commissioner of the Government of India, visited the Punjab Agricultural University recently. During his visit he had a meeting with the Vice-Chancellor, Dr. Sukhdev Singh, faculty of the Veterinary college and the Director of Animal Husbandry, Punjab to discuss various research schemes working in the University and to make an on the spot study of various activities relating to veterinary and animal husbandry.

Dr. Chatterjee also inaugurated a new block of Animal Nutrition Complex. He urged the scientists to implement the techniques of feeding fermented rice straw on a commercial scale to tide over severe fodder shortage in the adjoining States for which the Union Government has sanctioned Rs. 600 crore to purchase feed and fodder. He told that one lakh bales of fermented rice straw could be purchased from Punjab.

"Call Off Strike Unconditionally" —AIU

The Standing Committee of the Association of Indian Universities, at its extra-ordinary meeting held on September 3, 1987 in New Delhi, discussed the situation arising out of strike by the teachers regarding the revision of pay scales. The Committee is of the considered view that the revised scales announced by the Government are appropriate and reasonable. It is also noted that they compare favourably with the replacement scales suggested by the Fourth Pay Commission. It was also noted that when the scales were revised last time in 1973, they were not uniformly implemented by all the states, and that some states took a long time to implement those scales with the result that teachers in those states had suffered. In this revision, the Committee is of the opinion that the revised pay scales should be implemented by all the states uniformly and simultaneously, i.e., from 1-1-1986 and to ensure this implementation, the Government of India should give 100% assistance to the states for the Plan period.

The Committee is of the view that there should be enough flexibility in the implementation of the scales to provide suitable promotional opportunities to deserving teachers. While recommending this flexibility, the Committee feels that there should be proper accountability of the work done by the teachers.

Teachers have been on strike for about a month, as a result of which academic work in the universities has greatly suffered, the academic calendar has been disturbed and it may be difficult to repair this loss. Any further delay in the resolution of the conflict will cause irreparable damage.

The Committee, therefore, appeals to those teachers who are on strike to ponder over this, and call off the strike unconditionally in the larger interests of the students and the society. The Committee also appeals to the Government to enter into a dialogue with the teachers so that the present stalemate is resolved and normalcy is restored on the campuses.

The extra-ordinary meeting of the Standing Committee was attended by 12 Vice-Chancellors from different universities of the country and chaired by the President, Professor G. Ram Reddy, Vice-Chancellor, Indira Gandhi National Open University.

News from UGC

Commonwealth Fellowships and Scholarships 1988-89

The University Grants Commission (UGC) has asked the Universities to nominate suitable teachers for the award of **Commonwealth Academic Staff Fellowships and Scholarships** for the year 1988-89.

The Fellowships, tenable for one academic year, are intended to help the teachers working in the universities and affiliated colleges to enhance their qualifications and experience in the universities or similar institutions in the United Kingdom. The scholarships which are normally for 2 academic years are to enable the awardee teacher to complete his Ph.D. For this purpose no special areas of study have been allocated. However, the fields of medicine and surgery have been excluded because these have been separately covered under Commonwealth Medical Awards.

As the number of fellowships and scholarships is limited, the Universities have been asked to nominate not more than two teacher from each University and affiliated colleges. The last date for the receipt of nominations in the prescribed proforma by the UGC is October 31, 1987.

Interested teachers may contact their respective Universities for further details.

Sports News

AIU to Organise Central Zone Badminton

AIU will organise the Central Zone of the Inter-State Badminton Championship for men and women this year. The Championship is a part of the Senior National Inter-State Championship which is scheduled to be held at Jamshedpur early next year. Teams from Indian Railways, P & T Sports Control Board and Universities compete at the zonal level to qualify for participation in the Inter-State Championship. Rajasthan University, Jaipur is organising the Central Zone Championship on behalf of the AIU at Jaipur on Sept. 18, 1987.

Universities' Team for participation in the championship will be selected at Jaipur after selection trials on Sept. 8 & 9, 1987. The selected players will be retained for a coaching camp till their participation in the Central Zone.

Varsities Wrestling Team for Federation Gold Cup

The Varsities Wrestling Team consisting of Randhir Singh (HAU), Raj Kapoor (GNDU), Bijender Singh (Meerut), Azad Singh (HAU), Krishan Kumar (HAU). Jatan Singh (Meerut), Param Jit Singh (GNDU), and Dharamveer (HAU), will participate in the Federation Gold Cup Wrestling Championship to be held at Delhi from Sept. 9 to 12, 1987.

These wrestlers are, at present, undergoing training at Kurukshetra University under the supervision of Mr. M. L. Saini, Wrestling Coach.

News from Abroad

European Education Needs Transformation

In an era of rapid technological change the present educational and training systems throughout Europe are becoming obsolete and threaten a polarisation of the work force affecting the jobs and incomes of individuals. Against the traditional division between blue collar and white collar jobs is emerging a new category of workers those who have acquired new information technology (NIT) skills and those who have not.

According to an International Labour Organisation report Europe lags far behind Japan and United States in computerisation and new technology diffusion because its training policy objectives are outdated and divorced from industrial realities and needs. Other constraints include shortage of up-to-date instructors, insufficient training software and hardware, lack of financial resources and obsolete curricula.

According to the report, education and training in Europe must undergo a profound transformation to meet the skill challenge head-on. For this it says the ranks of the industrially experienced teachers must be built up, new machanisms and sources of finances developed to ensure relevent training equipment and software and constant appraisal of curricula be conducted to match the reality of the labour market.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
September 18-21, 1987	National Seminar on Energy Education	To discuss various aspects of energy education—meaning and scope, resources, institutionalisation, teacher preparation, curriculum development, and role of mass media.	Department of Education, Rohilkhand University	Dr. Beena Shah, Organising Secretary, NASEEZ, Department of Education, Rohilkhand University, Bareilly-243 001, U.P.
Sept. 21 - Oct. 4, 1987	Training Course in Research Methodology in Geography	To expose the participants to research methods in Geography and quantitative and cartographic techniques employed in Geographical research	Department of Earth Sciences, Manipur University, Imphal.	Dr. R.P. Singh, Dpartment of Earth Sciences, Manipur University, Imphal.
October 5-9, 1987	Short-term Course on Advanced Image Processing for Remote Sensing.	To appraise the scientists/engineers, working in the area of Image Processing and its Applications to Remote Sensing, regarding techniques, developments and future trends in the field of Image Processing.	Indian Space Research Organisation (ISRO) in collaboration with IIT, Bombay.	Dr. T.V. Pavate, Chief Project Engineer [CSRE], Principal Programme Coordinator (Training), ISRO-IIT (Bombay) Space Technology Cell, CSRE Building, Indian Institute of Technology, Powai, Bombay, 400 076.
November 16-20, 1987	Seventh National Symposium on Radiation Physics	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
November 25-27, 1987	**International Conference on Mud Architecture**	**To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.**	**Ministry of Urban Development, Govt. of India, in collaboraton with the Govt. of Kerala, HUDCO and the All India Housing Development Association.**	**Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & & Urban Development Corporation, K.G. Road, Bangalore - 560 009.**
November 26-28, 1987	**International Seminar on Instrumental Methods of Electro-Analytical Techniques.**	**To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electroanalysis.**	**Indian Institute of Science, Bangalore.**	**Prof. M.H. Dhananjaya, Principal and Chairman o the Organising Committee, S.J. College of Engg., Mysore.**
December 7-11, 1987	**Seventh Triennial International Conference on Thin Films. (ICTF-7)**	**To take stock of recent progress in the field of science, technology and applications of their films.**	**Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.**	**Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.**
December 18-19, 1987	National Conference on Role of Universities in Implementation of New Education Policy	The Conference will focus on Management of Higher Education, Improvement in Efficiency and New Strategies in Higher Education vis-a-vis New Education Policy	Association of Indian Universities in collaboration with Osmania University, Hyderabad.	Dr. V. Natarajan, Project Director (Exams) Association of Indian Universities, 16, Kotla Marg, New Delhi-110002

Central Institute of English and Foreign Languages

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General Information

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K. Jayashankar
REGISTRAR

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

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Davis, Denis. Educational funding and management under constraint with special reference to higher education in Australia. *Hr Edn* 16(1), 1987, 63-73.

Fielden, John and Dalrymple, Hew. Flexibility in setting fees. *Hr Edn Q* 41(2), 1987, 138-43.

Mace, John. Overseas student fee policy : Some economic considerations. *Hr Edn Rev* 19(3), 1987, 37-54.

VOCATIONAL EDUCATION

Braun, Frank. Vocational training as a link between the schools and the labour market: The dual system in the Federal Republic of Germany. *Comp Edn* 23(2), 1987, 123-43.

Glover, Ian A and Kelly, Michael P. Sociology for technik. *Hr Edn Rev* 19(3), 1987, 24-36.

PHYSICAL EDUCATION

Sharma, P.D. Physical education and nation-building. *J Indian Edn* 12(6), 1987, 44-7.

ADULT EDUCATION

Charanyananda, Wilawan. Work-oriented, non-formal, career education : Call it what you like—In Thailand it works. *Education in Asia & the Pacific* (23), 1986, 8-12.

DISTANCE EDUCATION

FEEDBACK FORMS and forms of feedback. *Open Learning* 2(2), 1987, 42-3.

Guri, Sarah. Quality control in distance learning. *Open Learning* 2(2), 1987, 16-21.

INDEPENDENCE IN learning : Towards community. *Open Learning* 2(2), 1987, 52-5.

IS DISTANCE education more or less effective than conventional education ? *Open Learning* 2(2), 1987, 51-2.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Jimenez, Emmanuel and Tan, Jee Peng. Decentralised and private education : The case of Pakistan. *Comp Edn* 23(2), 1987, 173-90.

Piasek, Ryszard and Vaughan, Michalina. The crisis of Polish higher education. *Hr Edn* 16(1), 1987, 53-62.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Marine Biology

1. Gopal, C. *Nutritional studies in juvenile Penaeus indicus with special reference to protein and vitamin requirements.* CUST.
2. Gopala Krishna Murti, P. *Studies on thermal structure in the seas around India.* CUST.
3. Patel, R.I. *Assessment of prawn fishery resources of River Ojat and nearby backwater areas : Their impact on socio-economic condition of the fishermen of Navibandar Village (Saurashtra).* Saurashtra.

Biochemistry

1. Chattopadhyay, Diptendu. *Studies on the separation and properties of brain cells.* Calcutta.
2. Radha, Ayyagari. *Lectins in Indian foods and their physiological significance.* Osmania.
3. Renuka. *Ribosome-membrane interactions and carcinogenicity.* Panjab.
4. Sashidhar Rao, Beedu. *Role of mycotoxins and vitamins in the development of pellagra.* Osmania.
5. Sengupta, Pritamkumar. *Studies on the mechanism of detoxification of pesticides and their metabolic effects in germinating wheat.* Calcutta.

Botany

1. Bajaj, Veena. *The effect of antibiotics and mutagenic chemicals on certain members of green algae, Scenedesmus Spp.* Rajasthan.

2. Bhargava, Shekhar, C. *Studies on growth and morphogenesis in cell and tissue cultures of Vigna aconitifolia (Jacq) Morechel.* Rajasthan.

3. Chaubey, Om Prakash. *Comparative studies of vegetational spectrum and edaphic conditions under natural forests and monocultures of teak.* HS Gour.

4. Gopinath, Ranganathan. *Studies on the epidemiology and ecology of sheath rot disease of rice caused by Acrocylindrium oryzae Sawada.* Osmania.

5. Jat, Banwari Lal. *Studies on free living and associative nitrogen fixing bacteria in the rhizosphere of some grasses in Rajasthan : Cynodon dactylon and Dichanthium annulatum.* Rajasthan.

6. Jayabalan, M. *Histological, histochemical and biochemical studies on guahule, Parthenium argentatum.* Patel.

7. Malti. *Studies on reproductive biology and interspecific crossability in cultivated and three wild species of Cicer.* Delhi.

8. Man Mohan Krishan. *Studies on potato virus X (PVX) in potato tissue culture.* HP.

9. Mary Ratna Sri, Kancherla. *Studies on the seed coat and fruit wall anatomy and histochemistry in Apocynaceae and Asclepiadaceae.* Andhra.

10. Mishra, Veenapani. *Ecological studies of some common weeds of paddy fields of Bilaspur.* Ravishankar.

11. Molly, M.J. *Organisation and morphogenesis of the vascular system in Polypodiaceae—an inquiry into the nature of shoot system in vascular plants.* Calicut.

12. Nainar, Syed Aliar Zindha. *Experimental studies on vanilla.* Calicut.

13. Narain, Bipin Kumar. *Studies on seed pathology of vegetable crops in chhatisgarh.* Ravishankar.

14. Padala, Sailaja. *Studies on free living and associate nitrogen fixing bacteria in root region of some desert grasses : Laxiurus indicus Hern and Cenchrus penniseti formis Hochst.* Rajasthan.

15. Pramanik, Arabinda. *Taxonomic revision of the tribe Hedysareae (Leguminosae) in India excluding the genus Desmodium.* Calcutta.

16. Raghuram, Yellepedi. *Morphactin regulated growth and development in Solanum melongena and Capsicum annuum.* Patel.

17. Rosy, P.A. *Studies on the weaver ant, Oceophylla smaragdina Fabricius (Hymenoptera : Formicidae) of India.* Calicut.

18. Sarabjit Kaur. *Evaluation of the contribution of plant parameters in the phosphorus nutrition of pulse crops.* PAU.

19. Shankar Lingam, S. *Studies on helminthosporium turcicum leaf blight on maize.* Osmania.

20. Singh, Balram. *Some aspects of chlamydomonas physiology.* JNU.

Agriculture

1. Haque, Mohammad Fazlul. *Response of urdbean Vigna mungo (L) Hepper genotypes to pulse beetle, Callosobruchus maculatus (F) and evaluation of some edible plant products as protectants against pulse beetle.* HAU.

2. Ranjit Singh. *Studies on the pest status, biology and control of mushroom-infesting springtails and mites.* PAU.

3. Sharma, Surrender Kumar. *Studies on the effect of growth regulators on insect foraging and pollination of some entomophilous crops.* YS Parmar.

Zoology

1. Dasmahapatra, Subhendu. *Investigations on the larval trematodes of some fresh water snails of Bengal and their host-parasite relationships.* Calcutta.

2. Haranath Babu, M. *The effects of sepia shell extract on some enzymes in brain, liver and muscle in leptazol convulsions.* Osmania.

3. Joshi, Nayana. *Seroepidemiology and immunological profile of virus 'B' hepatitis.* Osmania.

4. Mahapatra, Biswamitra. *Histochemical studies of Biogenesis in fishes.* Berhampur.

5. Manjit Singh. *Studies on the management of population of the Indian mole rat, Bandicota bengalensis Gray through behavioural and reproduction manipulations.* PAU.

6. Saraswat, Amita. *Neurobiological studies on the pre and post-natally developing mice brain after a low level tritiated exposure.* Rajasthan.

7. Subramanyam, Gani. *Studies on population dynamics and epidemiological aspects of hookworm and other helminth infections in minor's population of Kothagudom, a coal mining area of Andhra Pradesh.* Osmania.

8. Yasmeen, Rafath. *Physiological responses of fresh water fish, Anabas scandens to the toxicity of endosulfan.* Osmania.

9. Vijai, Muddu. *Effect of heavy metals and their related compounds on mammalian reproduction with special reference to human spermatozoa.* Osmania.

Medical Sciences

1. Satyanarayana, Kakarala. *Social epidemiology of nutrition in Ranga Reddy District.* JNU.

2. Srivastava, Pramod Kumar. *Pulmonary biochemistry of rats exposed intratracheally to fly ash.* Delhi.

3. Swarna, Mandava. *Biochemical and cytogenetic studies in a selected group of mentally retarded children.* Osmania.

4. Vara Prasad, Tata Nagendra. *New analytical methods for some diuretics in pharmaceutical preparations.* Andhra.

5. Vijayalaxmi, K.K. *Cytogenetic effects of drugs on mice.* Mangalore.

Veterinary Science

1. Chungath, Jose John. *Correlative anatomy of the corpus luteum and placentome in goat.* HAU.

INDIAN INSTITUTE OF TECHNOLOGY

MADRAS

Advertisement No. IITM/R/6/87

APPLICATIONS are invited for the post of REGISTRAR at this Institute. While the post is permanent, the appointment can be on a contract for a limited period. Besides pay and allowances leave, medical facilities etc., are admissible as per Institute rules.

Scale of Pay

Rs. 1500-60-1800-100-2000-125/2-2500 (likely to be revised after the implementation of the IV Pay Commission recommendations).

Gross Emoluments

Rs. 3,245 p. m. (excluding HRA) on the minimum of the pay scale.

Accommodation

Unfurnished licence-fee free quarters will be provided in the Campus.

Job Description

The Registrar of the Institute is the custodian of the records, the common seal and funds of the Institute. He is the Secretary of the Board of Governors, Senate, Finance Committee and Buildings & Works Committee. He has the overall control and responsibility of the Office including recruitment, purchases and accounts.

Age

Should not be less than 50 years and should not be more than 55 years as on 1st January 1988. Upper age limit may be relaxed for internal candidates if they otherwise qualify.

Qualification

1. A good Bachelor's degree in Arts, Science, Commerce, Engineering or Technology of a recognised University.
2. A post-graduate degree or diploma in any of the above fields or in Public Administration/ Management of a recognised Institute/University or its equivalent; or recognised qualifications as Chartered/Cost/SAS Accountant.

Experience

A minimum of 15 years of administrative experience, preferably in a Government educational or research Institute or in a Commercial organisation of national standing. Out of this, at least 8 years should be in a responsible position. The candidates would be expected to have an adequate grasp of financial matters, secretarial experience of statutory bodies and committees, and some familiarity with academic activities and working procedures in higher educational institutions.

Desirable

1. Teaching and research experience or experience of life in a residential educational campus.
2. Experience of computer systems for information processing and retrieval.

   In the case of candidates with exceptional qualifications, the duration of experience may be relaxed suitably.

General Information/Conditions/Instructions

(i) Other things being equal, preference will be given to SC/ST candidates.

(ii) Experience means experience gained after the qualifying degree.

(iii) The prescribed qualifications are minimum and the mere fact that a candidate possesses the same will not entitle him/her to be called for interview.

(iv) The Institute reserves the right to restrict the number of candidates for interview to a reasonable limit, on the basis of qualifications and experience higher than the minimum prescribed in this advertisement.

(v) The Institute also reserves the right of rejecting any or all applications without assigning any reasons therefor.

For application forms, please address the DEAN OF ADMINISTRATION, Indian Institute of Technology, Madras-600 036 with a self-addressed stamped (Re. 1.00) envelope (22 cm x 17 cm). Persons in the service of Government establishments and Public Sector Undertakings should apply through proper channel.

Completed applications with a crossed non-refundable current Indian Postal Order of the value of Rs. 7.50 (Re. 1.90 for SC/ST candidates) drawn in favour of the Institute, payable at IIT Madras P.O., should be sent to the Dean of Administration of the Institute.

The last date for receipt of completed applications is **23rd September, 1987**.

DEAN OF ADMINISTRATION

Postgraduate Institute of Medical Education & Research

CHANDIGARH-160 012

ADMISSION NOTICE No. 687

Applications on prescribed form are invited for the following postgraduate/post doctoral courses etc. mentioned below for the academic session starting from **first January**, 1988 :

I. **First Year Junior Residents (for MD/MS Courses)** in the following subjects:

(a) **Clinical Group—44** Anaesthesia (5), Dermatology (2), ENT (1), Medicine (11), Obst & Gynae (3), Paediatrics (3), Psychiatry (3), Ophthalmology (3), Orthopaedic Surgery (1), Radio-Diagnosis (3), Radiotherapy (1) and Surgery (8).

(b) **Para-Clinical Group—6** Microbiology (1), Pathology (2) and Pharmacology (3).

(i) Those completing their internship after 31.12.87 are not eligible.

(ii) Candidate can apply for a maximum of two subjects in clinical group. They can apply for all the subjects in para-clinical group. Only one application needs to be submitted and the choice of subjects may be mentioned in the relevant column of the application. Application fee is Rs. 30/- per subject.

(iii) 22½% of the seats in each of the above mentioned groups are reserved for candidates belonging to Sch. Castes/Tribes. In addition, 5% seats are reserved for candidates who have served or are serving or have carried on private practice in rural areas for a minimum period of two years.

(iv) A limited number of sponsored/deputed candidates may also be accepted for the courses mentioned above.

II. **Senior Residents—9 (for D.M/M.Ch. courses)** in the following subjects :

D.M.		M.Ch.	
Cardiology	1	Neuro Surgery	1
Clinical Pharmacology	2	Plastic Surgery	2
Gastroenterology	2		
Neurology	1		

(i) A limited number (1-2) of sponsored/deputed candidates may also be accepted in all the subjects mentioned above as also for D.M. courses in Endocrinology, Nephrology and M.Ch. courses in Cardiovascular and Thoracic Surgery.

(ii) Upper age limit on 1.1.88-Not more than 35 years and 40 years for ex-servicemen and commissioned officers including E.C.O./S.S.C.Os. who have rendered alteast 5 years military service and have been released on satisfactory completion of assignment (including those whose assignment is due to be completed within 6 months). No upper age limit restriction for deputed/Sponsored candidates.

(iii) Candidates due to appear in M.D./M.S. examinations during November/December 1987 can also apply. They will be admitted to the entrance test only if they supply the result of their examination from the University concerned before the entrance test.

III. **Ph.D. Programme**

Vacancies exist in the following departments.
Anaesthesia, Biochemistry, Biophysics, Dermatology, Expt. Medicine, E.N.T. Gastroenterology, Immunopathology, Microbiology, Morbid Anatomy Neuro-surgery, Obst. & Gynaecology, Parasitology, Pharmacology and Urology.

IV. Diploma in Blood Transfusion and immunohaematology.

V. M.Sc. Medical Technology (Pathology) with Cytology or Haematology or Immunopathology or Morbid Anatomy as a special subject.

VI. M.Sc. Medical Technology (Microbiology) with Bacteriology or Parasitology or Virology as a special subject.

VII. M.Sc. Medical Technology (Pharmacology and Physiology).

VIII. M.Sc. Medical Technology (Radiology) with Radio Diagnosis or Radiotherapy as a special subject.

IX. First Year Junior Residents - 2 for the Department of Dentistry for a period of 6 months. Those who have already completed or will complete First Year Junior Residency of House Job for one year by 31.1.88 are not eligible.

Closing Date for the receipt of applications is 30.9.87.

General information

1. Candidates other than those belonging to Sch. Castes/Tribes having more than one failure during MBBS for (category 1) and BDS (for category No. IX) courses are not eligible. Sch. Castes/Tribes candidates with upto two failures in their MBBS/BDS career will be eligible.
2. Those applying for the reserved seats must appened with their applications, a certificate from the District Magistrate concerned in support of their claim. No other certificate will be entertained.
3. For courses at categories IV to VIII above only sponsored/deputed candidates will be considered.
4. The course at category IV is under the Punjab University.
5. The number of vacancies indicated in categories I, II and IX is provisional and is subject to change without prior notice.
6. The application must be accompanied with non refundable fee of Rs. 30/- in the form of postal order drawn in favour of the Director for each of the courses mentioned above. A candidate applying for more than one subject/course is required to submit separate application, complete in all respects for each subject/course, except for category No. 1.
7. Application form and detailed information are available from the office of the undersigned eithe personally on payment of Rs. 5/- at the counter from 11 A.M. to 12 noon and 3 P.M. to 4 P.M. o all working days or by post for which the request must be accompanied with a self addressed envelope size (23x10 cms) bearing postage stamps of Rs. 3.40 and crossed postal order for Rs. 5/- drawn in favour of the Director.

MMG

REGISTRAR

CLASSIFIED ADVERTISEMENTS

BHARATHIDASAN UNIVERSITY

TIRUCHIRAPALLI

Applications are invited by the Registrar, Bharathidasan University, Tiruchirapalli-620 024 upto **21-9-1987**, for the posts of Professors, Readers and Lecturers in the following Departments of the University.

Departments	Professor	Reader	Lecturer
School of Earth Sciences.	1	1	2
School of Social Sciences.	1	2	3

Scale of Pay

Professor : Rs. 1500-60-1800-100-2000-125/2-2500*

Reader : Rs. 1200-50-1300-60-1900*

Lecturer : Rs. 700-40-1100-50-1600*

(Plus usual allowances admissible to the Scale).

Qualifications

Professors

School of Earth Sciences

A Master's Degree in Geography with I or II Class, A Ph.D. Degree.

Desirable : Computer applications in Geography.

School of Social Sciences

A Master's Degree in Sociology with I or II Class.

A Ph.D. degree in Sociology with inter-disciplinary content.

Ten years of teaching experience at the post-graduate level in Sociology, out of which 5 years should be at the Reader's level. Should have successfully guided not less than three candidates for Ph.D. Should have published research papers in reputed journals.

Desirable : (1) Work experience in interdisciplinary teams.

(2) Knowledge of Tamil.

Readers

School of Earth Sciences

A Master's Degree in Geography/ Meteorology;

A Ph.D. degree.

School of Social Sciences

A Master's degree in Sociology with I or II Class.

A Ph. D. degree in Sociology or with inter-disciplinary content; Five years of teaching experience at the P.G. level in Sociology out of which 3 years should be at the Lecturer's level; Should have successfully guided atleast one candidate for Ph.D.

Desirable : (1) Work Experience in interdisciplinary teams.

(2) Knowledge of Tamil.

Lecturers

School of Earth Sciences

A Master's degree in Geography/ Geology;

A Ph.D. degree.

Desirable : Quantitative techniques.

School of Social Sciences

A Master's degree in Sociology with I or II Class;

A Ph.D. degree in sociology or with interdisciplinary. Should have published research papers in reputed journals.

Desirable : (1) Work experience in interdisciplinary ; (2) Knowledge of Tamil ; (3) Teaching experience.

Area of Specialization

School of Social Sciences

Professor's Post : 1. Modernization and Development.

2. Science Technology and Social Change.

Reader's Post : 1. Social Policy and Welfare.

2. Sociology of occupations, professions and work.

Lecturer's Post : 1. Sociology or Education.

2. Sociology of organizations.

3. Sociology of Science.

The University reserves the right to short-list the applications for interview.

Applications in eight copies in plain paper are to be sent in sealed envelopes with the following details and other relevant information.

(1) Name of the Applicant (2) Address (to which communication may be sent) (3) Age and date of birth (4) Community: (FC/BC/SC/ST) (5) Present position (6) Academic qualifications (with dates on which degrees were taken) (7) Experience: (a) Teaching : PG level/UG level (b) Research (with publications, if any) (8) Distinctions/Honours (9) Membership of professional academic or Scientific bodies (10) Acceptable salary (11) Any other information (12) References (with names and address) (13) Testimonials (14) Signature of the applicant.

Applicants who are in service should send their applications through their employer or they should produce a 'No Objection Certificate' from the employer at the time of interview without fail.

Note

*Pay Scales to the above posts are likely to be revised in due course.

Prof. T.S. Shanmuga Sundaram
REGISTRAR

PANJAB UNIVERSITY CHANDIGARH

Advertisement No. 7/87

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, alongwith Postal Orders of Rs. 10/- by **30.9.87**. Fourteen days extra time is permissible to persons who have to submit their applications from abroad :

1. **Professors** (Rs, 1500-60-1800-100-2000-125/2-2500)

   Geology-1
   Zoology (Cell Biology/Entomology)-1
   Physics-1

2. **Readers** (Rs.1200-50-1300-60-1900)

   Microbiology-2
   Biochemistry-3
   Social Anthropology-1

3. **Lecturers** (Rs. 700-40-1100-50-1600)

   Biophysics-3
   Microbiology (Virology & Microbial Genetics)-2
   Geology-2
   Zoology-1 (temporary-leave vacancy)
   Physics-1
   Biochemistry-2

4. **Technician-cum-Lecturer** (Rs. 700-40-1100-50-1600)

   Biophysics-1 (temporary but likely to continue)

5. **Teaching Assistants** (Rs. 550-20-650-25-750)

   Pharmaceutical Sciences (Pharmaceutical Chemistry)-1
   Biophysics-1
   Geology-1

6. **Research Assistant** (Rs. 550-20-650 25-750)

   Microbiology-1

7. **Research Scholars** (Rs. 800/- p.m. fixed)

   Botany-2
   Anthropology-1

8. **Research Scholar-cum-Demonstrator** (Rs. 800/- p.m. fixed)

   Biochemistry-1
   Chemistry (Physical Chemistry)-1

Note :

1. The candidates who had applied for the post of Professor in Zoology in response to Advertisement No. 11/86 need not apply again. Their applications will be considered.
2. The Vice-Chancellor could place before the Selection Committee names of the suitable persons for its consideration alongwith the applications received in response to the advertisement.
3. It is not obligatory on the part of the University to call for interview every candidate who possesses the essential qualifications.
4. The number of vacancies may change.
5. The University may also prepare a panel of suitable candidates for appointment against vacancies occurring within a specified period.

Detailed instructions, specializations, various allocations and reservations concerning the various posts and other details are available in the application forms. These can be obtained from the Cashier, Panjab University, Chandigarh personally on payment of Rs. 2/- or by making a written request to the Assistant Registrar (Estt.-1), Panjab University, Chandigarh accompanied by self-addressed stamped (worth Rs. 3.40) envelope of 23x10 cms. and Postal Order of Rs. 2/- drawn in favour of the Registrar, Panjab University, Chandigarh.

MMG/5322

UNIVERSITY OF KERALA

No. P.R. 1576/21/87
University Buildings
Trivandrum

Notification

In partial modification of University Notification of even No. Dated 31-7-87 it is hereby notified that the last date for receipt of applications for the posts of Professor in Statistics and Lecturer in Russian has been extended to 22-9-87.

S.R: Rajagopal
REGISTRAR

TILAK MAHARASHTRA VIDYAPEETH, PUNE

(Declared as a 'Deemed University' under the U.G.C. Act)

CORRIGENDUM

1. Professor and Director :
   Nehru Institute of Social Studies

   The last date for receipt of applications is 30.9.1987 instead of 31.8.1987.

M.R. Khanwelkar
REGISTRAR

INDIAN VETERINARY RESEARCH INSTITUTE

IZATNAGAR : U.P.

Advt. No. 2/87—IVRI.

Applications addressed to the Asstt. Registrar (MRDPC), IVRI, Izatnagar-243122, are invited for recruitment to the following posts at this Institute,under the administrative control of the ICAR. The posts are temporary but likely to continue.

Candidates fulfilling the required eligibilities should apply giving full particulars, on plain paper, in the format given below, within 15 days from the date of advertisement. Candidates serving in Govt./Semi Govt./Autonomous Organisations should apply through proper channel. The posts are pensionable but non-government. The Head quarters of the posts will be at Izatnagar/Mukteshwar (Kumaon) for the present, but the appointees will be liable to serve in any Institute of the ICAR/IVRI located anywhere in India. Applications, incomplete, in any respect or received after the due date will not be entertained nor any correspondence on the subject will be entertained.

1. T-5 (Editor-English) 1 Post, Rs. 2000-3500 (Un-reserved)

Essential : Master's Degree from a recognised University in English.

Desirable : Bachelor's Degree or Diploma in Journalism or some teaching experience at Graduate level.

2. T-4 (Sr. Tech. Asstt.) 3 Posts Rs. 1640-2900, 1 Post Reserved for S/C and 2 posts Un-reserved.

Essential : *i) Three years Diploma/Bachelor's Degree in Science (ii) Three years experience in the relevant field for Diploma Holders.

Desirable : (i) Master's Degree in Chemistry/Zoology/Botany/Microbiology/Biochemistry

(ii) Degree/Diploma in Journalism.

For the posts of Sr. Tech. Asstt., the candidates will have to qualify a written examination consisting of two papers viz. 1. Engilsh; and 2. General Knowledge, syllabus of which is given below :

English Part-I : Paper will be designed to test the candidates' ability to understand English and write in that language correctly & effectively ; English Part-II ; Paper will consist of questions designed to test candidate's ability to write good English and precis writing.

General Knowledge : Knowledge of current events and of such matters of everyday observation and experience in their scientific aspects as may be expected of an educated person who has not made a special study of any subject. The paper will include questions on Geogra phy of India. The paper may also include questions of History of India of a nature which candidates should be able to answer without special study.

Note :- Only those candidates who qualify in the written Examination, will be called for interview.

3. T-4 (Electronic Computer Operator) 1 post Rs. 1640-2900-Un reserved.

Essential *(i) Three years Diploma/ Bachelor's Degree/Equivalent qualification in Computer Science.
(ii) Three years experience in actual operation of Electronic Computer for Diploma Holders.

Desirable : (i) Master's Degree in Statistics/Bio-statistics/Computer Science/Computer Applications.
(ii) Familiarity with console operation.
(iii) Knowledge of the elements of data processing and Computer Programming.

4. T-II-3 (Sr. Mechanic) 1 post Rs. 1400-2300 reserved for S/C

Essential : *(i) Three years Diploma/ Bachelor's Degree in Refrigeration & Airconditioning.
(ii) Three years experience in maintenance & repair/overhauling of Airconditioning/Cold Storage Plants in Govt./Public/Pvt. Sector Organisation of repute for Diploma Holders.

OR

Higher Certificate in Refrigeration & Airconditioning with 5 years experience in the above field.

5. T-II-3 (Bindry Foreman) I post Rs. 1400-2300 reserved for S/C.

Essential : (i) Degree or Diploma in Printing Technology from a recognised Institution.
(ii) Atleast three years' experience for Degree Holders and five years' experience for Diploma Holders in the relevant field.

6. T-II-3 (Instrumentation Supervisor) 1 post Rs. 1400-2300 for S/C.

Essential : *(i) Three years Diploma/ Bachelor's Degree in the relevant field,

OR

Higher Certificate in the trade with five years experience in the relevant field.

(ii) Atleast 3 years experience for Diploma Holders.

Desirable : (i) Experience in repair of Electronic equipments.

7. T-4 (Lab. Technician) 2 posts Rs. 1640-2900, 1 for ST & 1 un-reserved.

Essential : *(i) Three years Diploma/ Bachelor's Degree in Microbiology/Biochemistry.
(ii) Three years' experience in the field of Microbiology/Biochemistry after obtaining the essential qualifications in case of Diploma Holders.

Desirable : (i) Experience of Microbiological/Biochemical work in a Laboratory of repute.

(ii) Master's Degree in Microbiology/Biochemistry.

8. T-2 (Stockman) 1 post Rs. 1200-2040, reserved for S/T.

Essential : (i) Matriculate with atleast one year Certificate in the relevant field.

OR

Matriculate with 5 years' experience of working in an organised Pig Farm.

Desirable : (i) B.Sc. Biology of B.Sc. Ag, or inter or equivalent qualification with 5 years' experience of having worked in an organised Animal/Pig Farm.

(ii) Diploma in the relevant field.

9. T-2 (Jr. Mechanic Psychomatric Chamber) 1 post Rs. 1200-2040, reserved for Ex-Servicemen:

Essential : (i) Atleast one year's Trade Certificate in Refrigeration and Airconditioning.

OR

Matriculate with five years' experience of working in operation and maintenance of Airconditioning/Cold Storage Plants (Particularly the controls) in a Govt. Organisation or reputed public/ private sector undertakings/Organisations.

Desirable : (i) Higher Certificate in Ref. & Airconditioning.
(ii) 2 years' experience in the above field.

10. T-2 (Farm Assistant) 1 Post Rs. 1200-2040 reserved for S/C.

Essential : (i) Matriculate with one year Certificate in the relevant field.

FORMAT

Advt. No. 2/87-IVRI

APPLICATION FOR THE POST OF——————————— —

1. Name in full
   (in capital letters)
2. Father's/Husband's Name :
3. Present Postal Address :
4. Permanent Address :
5. Place & Date of Birth :
6. Age on closing date of Advt. :
7. Nationality : Sex :
8. Name of Employment Exchange :
   (i) Registration No.
   (ii) Valid upto
9. Category which he belongs i.e. SC/ST/PH/Ex-Servicemen/General :
10. Details of attested/photostat copies :
11. Qualification : Technical Qualification :

Pass port size
recent photograph
should be affixed
here

Name of Exam.	Name of Board/Univ.	Class or Division	%	Year	Subjects

12. If employed, give following particulars :

Name of Employer	Designation	Pay Scale & Salary drawn	Nature of employment Temp./Q.P./ Permanent	Date of Joining	Date of leaving

I hereby declare that all the statements made above are true, complete and correct to the best of my knowledge, and belief.

I also declare that (i) I have never been punished or debarred from Govt. (Central/ State), autonomous organisations and ICAR service, (ii) I have not been convicted by a Court of Law for any offence. In the event of any information being found false or incorrect or ineligibility being detected at any time before or after the examination/interview, action may be taken against me, and I shall be bound by the decision of the Employer.

Dated the :

Signature of Candidate

OR

Matriculate with five years' experience of working in a Livestock Farm.

Desirable : Bachelor's Degree in Agri. & Animal Husbandry with some experience of working in a Livestock Farm.

11. T-2 (Ref. Mechanic) 1 Post Rs. 1200-2040 Un-reserved.

Essential : Atleast one year's Trade Certificate in Refrigeration and Airconditioning.

OR

Matriculate with 5 years' experience of operation and maintenance of A.C. & Cold Room Plants in reputed Organisations.

Desirable : (i) Higher Certificate in Refrigeration and Airconditioning.

(ii) Two years experience in the above field·

12. **T-1 (Stockman-cum-Compounder) 1 Post Rs. 975-1540, reserved for S/C**

Essential : Matriculate with Certificate in Livestock Management and supervision from a recognised Govt. Institution.

OR

Matriculate with 5 years experience as Stock Asstt. or Vety. Compounder in a Govt. Institution.

Desirable : Diploma in the relevant field.

*In fields where the duration of Diploma Courses available in the country is only two years, the minimum qualification will be two years Diploma instead of three years Diploma.

The candidates already employed should apply through proper channel or furnish a 'NO OBJECTION CERTIFICATE' from their Employer.

The number of posts can increase or decrease. T.A. will be paid to SC/ST unemployed candidates as per rules applicable. The prescribed educational qualification are the minimum and mere possession of the same does not entitle candidates to be called for interview. When the number of applications received in response to an advertisement is larger and it will not be convenient or possible for the Institute to interview all the candidates, it may restrict the number of candidates for interview to a reasonable limit on the basis of qualifications and experience higher than the minimum prescribed in the advertisement or by holding a screening test. The un-employed candidates for the posts from Sl. No. 8 to 12 should be registered with the respective Employment Exchanges/Boards and the registration should be valid upto the date of interview.

Age : 18 to 30 years (Relaxable for SC/ST/PH/Ex-Servicemen as per rules and no age limit for ICAR employees.

Crucial date for determining the age limit shall be the last date for receipt of application from the candidate.

Office of the Registrar
Gauhati University : Guwahati-14

Establishment Branch

Advertisement No. 7 of 1987

Applications in the Standard Forms prescribed below are invited from eligible candidates and will be received upto 21.9.87.

1.	Professor of Physics Theoretical/Experimental	—	One post	—	(Permanent)
	Specialisation	—	Open		
2.	Professor of Education	—	One Post	—	(Permanent)
	Specialisation	—	Open		
3.	Professor of History	—	One Post	—	(Permanent)
	Specialisation	—	Open		
4.	Lecturer in Zoology	—	One Post	—	(Permanent)
	Specialisation	—	Animal Physiology. Candidate must be an M.Sc. in Zoology with specialisation in Physiology having research and teaching experience in Physiology.		
5.	Lecturer in Journalism	—	One Post	—	(Permanent)
	Specialisation	—	Open		
	(Candidate should have research experience in Journalism).				
6.	Lecturer in Geography	—	One Post	—	(Permanent)
	Specialisation	—	Candidate should have specialisation in Agricultural Geography and continuous experience in teaching at least in degree honours level.		
7.	Lecturer in Sanskrit	—	One Post	—	(Permanent)
	Specialisation	—	Darshana		
8.	Lecturer in Sanskrit	—	One Post	—	(Permanent)
	Specialisation	—	Kavya		
9.	Lecturer in Linguistic	—	One Post	—	(Permanent)
	A good Master's degree in Linguistics from one of the Statutory Indian Universities.				

Specialisation : Training in the M.A. or Post M.A. Level in any of the following will be regarded as an additional qualification.

(i) Tibeto-Burman Linguistics (Boro or Mishing or Karbi or Dimasa).

(ii) Assamese Linguistics—Training in Structural and/or Transformational Generative grammar with reference to any of the language or Languages above will be regarded as an additional qualification.

Candidates specialising in diactronic Linguistics need not apply.

10. Lecturer in Persian
One Post—(Permanent)
Specialisation—Open

Scales of Pay

(1) Professor : Rs. 1500-60-1800-100-2000-125/2-2500/-

(2) Lecturer : Rs. 700-40-1100-50-1600/-

Essential Qualifications

Professor : An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at Doctoral level.

OR

An outstanding scholar with established reputation who has made significant conribution to knowledge.

(a) A Doctorate degree or research work of an equally high standard, and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University. Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection mittee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any the of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctorate degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightage being given to M. Phil or equivalent degree or research work of quality may be appointed provided he has done research work for atleast two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctorate degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Procedure of Submission of Applications

Applications in prescribed Form mentioned below in 7 (Seven) copies together with an application fee Rs. 20/- (Rupees twenty) and Rs. 10/- (Rupees ten) in case of Scheduled Caste/Scheduled Tribe candidates only by "CROSSED INDIAN POSTAL ORDERS" drawn in favour of the Registrar, Gauhati University payable at Gauhati—781014 Post Office should be sent in an inner sealed cover superscribed "Application for the post of (Name of the post applied for with Sl. No.) Advt. No.—" enclosed in an outer cover addressed to the Registrar, Gauhati University, Guwahati-14.

Last Date of Receipt of Application

Applications will be received upto **21,9.87** only. Applications received after the last date of submission and not submitted in prescribed form as given below in 7 (seven) copies will not be entertained.

Number of this advertisement and name of the post alongwith the serial No. of post must be referred to in the application.

Persons in employment should apply with a No objection Certificate from the present employer.

Interview

Candidates will be required to appear at an interview if and when called for at their own cost.

Canvassing directly or indirectly will be a disqualification.

REGISTRAR

PRESCRIBED FORM FOR APPLICATIONS

1. Advertisement No. :
2. Serial No. of the Post in the Advertisement :
3. Name of the Post applied for :
4. Name of the applicant in full (in block letters) :
5. Father's Name in full :
6. Home Address in full :
7. Present address in full :
8. Date of Birth by Christian era :
9. Age on the Date of application :
10. Nationality :
11. Community (Scheduled Caste/Tribe) :
12. Educational qualification :

Examination Passed	Name of Board/ University.	Yr. of passing	Div./ Class	% of Marks	Rank if any
1	2	3	4	5	6
H.S.L.C.					
H.S./P.U.					
B.A./B.Sc./B.Com./LL.B.					
M.A,/M.Sc./M.B.A./LL.M.					
M.Phil/M.Litt.					
Ph.D./D.Litt.					

Specialisation in M.A., M.Sc., M.Com., Degree :
Title of the Ph.D. dissertation :

N.B. : Attested copies of marksheets and Certificates of all Examinations passed should be enclosed with all seven copies of applications.

13. Past experience if any (give details) :
14. Research Publications (give details in separate sheet of papers) :
15. Present Occupation if any :
16. Name of employer (if employed) :
17. Basic pay drawn :
18. Name of Two referees (not related to the candidate). :

I hereby declare that the particulars furnished above are true in all respects. I shall be liable to action at any time if the particulars are found otherwise.

Date : Signature of the Applicant

UNIVERSITY OF KALYANI

KALYANI, WEST BENGAL-741235
Pin—741235

Advt. No. 4/87 **Dated : 27-8-87**

Applications are invited for the post of Finance Officer on pay and allowances as admissible under the rules of this university.

Name of Post : Finance Officer
—One Post

Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500.

Qualifications

(a) **Essential**

- (i) Uniformly good academic record with a B+ Master's degree or its equivalent professional qualifications.
- (ii) Membership of the Institute of Chartered Accountants/Cost Accountants of India or experience in I.A.A.S. and equivalent service.

  OR

  A Master's Degree in Business Administration with specialisation in Finance.

  In case of candidates holding professional qualifications as in item (ii) the requirement of M.A. Degree may be waived.
- (iii) Preference will be given to Master's Degree in Commerce.
- (iv) At least 15 years' experience in a government or a university or in an Institute of High Learning in a high administrative post involving supervision, control, planning and audit.
- (v) Age not less than 40 years. Relaxable in case of exceptionally qualified candidates.

The principle of reservation of posts for candidates belongs to scheduled castes and scheduled tribes shall be followed to the extent possible as per orders issued by the State Govt. from time to time.

Applications must be submitted in the prescribed form which may be obtained from the Office of the undersigned from 1-9-87 personally or by sending self-addressed stamped (Rs. 1.80) envelope (25 cm. x 12 cm.) on payment of Rs. 7.50 (one-fourth for scheduled castes and scheduled tribes candidates) by crossed Indian postal order in favour of the 'University of Kalyani. Persons already in employment should apply through proper channel. Applications should be submitted in envelopes superscribed with the name of the post applied for along with attested copies of certificates, marksheets in respect of all the examinations passed and reprints of publications/books and the same must reach the office of the undersigned on or before **21.9.87.**

The scheduled castes and tribes candidates must produce copies of caste certificates from the appropriate authority (S.D.O.) in their own area at the time of collecting forms.

Forms will be distributed between 11.30 a.m. and 3 p.m. on full working day (Saturday upto 1 p.m.). Candidates called up for interview will have to appear for the same at their own cost.

Those who applied in response to our previous advertisements need not apply again. If the Government relaxes the qualifications, their applications would be considered according to the relaxed qualifications.

REGISTRAR

DEVI AHILYA VISHWA-VIDYALAYA, INDORE

UNIVERSITY HOUSE
INDORE—452 001.

No. Estt./III (9)/87 **Dated : 25.8.1987**

ADDENDUM

In the advertisement for the teaching posts issued vide No. Estt./III(9)/87 Dated 20.8.1987, the number of posts shown under the following Departments may be read as under :

Sr. No. 8	Economics	(a) Professor-1 (b) Reader-1 (c) Lecturer-2
Sr. No. 10	Journalism & Mass Communications.	Reader-2

The last date for submission of application forms i.e. **5.10.1987** and other terms and conditions will remain unchanged.

S.P. Arya
REGISTRAR

ASSOCIATION OF INDIAN UNIVERSITIES

AIU HOUSE, 16 KOTLA MARG, NEW DELHI-110002

Applications from Indian citizens are invited for the following posts in the prescribed form available on payment of Rs. 2/- from the Office of the Association :

Deputy Secretary : Pay Scale Rs. 3700-5000 (Revised)

Postgraduate with first class or high second class degree with at least ten years experience in an administrative or academic post in University/Government Department/Autonomous Organisation. Knowledge of administrative rules and understanding of issues in university system desirable. Persons with experience of working in Universities/Colleges will be preferred and can be considered for deputation terms.

Senior Cultural Officer : Pay Scale Rs. 3000-4500 (Revised)

Master's degree from a recognised Institution/University. Five years experience with a minimum of two years in youth/organising cultural activities at universities/colleges/other organisations. Incumbent will be responsible for administration of cultural activities at Inter-University/National/International levels. Deputationists from University/Colleges will be preferred.

The posts carry dearness and other allowances generally at the Central Government rates. Total emoluments at the initial basic pay of Rs. 3700/- and Rs. 3000/- amount to Rs. 5435/- and Rs. 4390 respectively including HRA and Special Allowance. Relaxation in any of the requirements may be made in exceptional cases. The Association reserves the right not to fill up the vacancy advertised, if the circumstances so warrant. SC/ST/Ex-servicemen will be given preference. Canvassing in any form by or on behalf of a candidate will be a disqualification.

Applications complete in all respects should reach the Office by **September 30, 1987.** Persons already in service should apply through proper channel. Applications received after the last date or without complete information may not be entertained.

INDIAN VETERINARY RESEARCH INSTITUTE IZATNAGER, U.P.

Advt. No. 1/87-IVRI

Applications addressed to the Administrative Officer (MRDPC), IVRI, Izatnagar-243 122, (U.P.) are invited for recruitment to the following posts at this Institute under the administrative control of Indian Council of Agricultural Research. The posts are temporary, but likely to continue.

Candidates fulfilling the required eligibilities should apply, giving full particulars, on plain paper in the Format given on page 36 within **15 days** from the date of this advertisement. Candidates serving in Government/Semi Government/Autonomus organisations should apply through proper channel. The posts are pensionable but non-Government. The Headquarters of the posts will be at Izatnagar, and its Regional Stations/Centres for the present, but the appointee will be liable to serve in any Institute of the ICAR located anywhere in India. Applications incomplete in any respect or received after the due date will not be entertained.

1. **Foreign Language Instructors : 3 Posts : (one each in English, German & Russian) : Rs.** 1100-1600 **(Pre-revised).** The posts will be filled up on deputation basis from amongst the suitable Lecturers/Asstt. Professors relevant to job specilization, working in various departments/Agril. University etc. initially for a period of one year in the first instance on standard terms of deputation. **Qualifications : Essential** : (1) Ph.D. Degree in the relevant subject with atleast a second class Master's degree from a recognised university or an equivalent degree from a foreign University OR A High Second class Master's degree and first class Bachelor's degree in the relevant subject with published research work of very high standard. (ii) Five years experience of teaching at Degree/P.G. level. **Desirable :** Degree or Diploma in Journalism.

2. **Engineer (Civil), T-6 at High Security Animal Disease Lab., Bhopal/Izatnagar : 1 Post: Un-reserved. Rs.** 2200-4000 **(Revised). Qualifications : Essential** : (i) Three years diploma/Bachelor's degree in Civil Engineering from a recognise University/Institute in Civil Engineering OR equivalent qualifications in Civil Engg. (ii) 5 years experience in the relevant field. **Desirable** : (i) Experience of working in an organisation/workshop/Factory of repute in the relevant field, preferably in construction of buildings/roads and Maintenance thereof in a research institute. (ii) At least five years experience.

3. **Asstt. Elect. Engineer T-6 : 1 Post Un-reserved : Rs.** 2200-4000 **(Revised). Qualifications : Essential :** (i) Three years diploma/Bachelor's degree in Electrical Engineering (ii) At least five years experience. **Desirable** : (i) Experience of working in an Organisation/Workshop/Factory of repute in the relevant field, preferably in the maintenance of electrical equipments/installations in a Research Institute. (ii) Master's Degree in the subject.

4. **Technical Officer T-6 (Embryo Transfer): 3 Posts (Un-reserved) Rs. 2200-4000. Qualifications : Essential :** (i) Three years' Diploma/Bachelor's degree in Veterinary Science/Master's degree in Zoology/Biochemistry/Physical Chemistry OR Equivalent qualifications in the relevant field (ii) Five years experience in the relevant field. **Desirable :** (i) Master's Degree in Bio-technology (ii) Training in Embryo Transfer technique, enanuplation spilliting of Embryos. Hormone Assay Procedures etc.

5. **Technical Officer (Monoclonal Antibodies) T-6 : 3 Posts : (Two un-reserved). (one for SC). Rs. 2200-4000. Qualifications : Essential :** (i) Three years' Diploma/Bachelor's degree in Veterinary Science/Microbiology/ Zoology/Bio-Chemistry/Chemistry. OR Equivalent qualifications in the relevant field. (ii) Five years' experience in the relevant field. **Desirable:** Master's Degree in the Bio-technology.

6. **Technical Officer (DNA Recombinant) : 2 Posts (Un-reserved). Rs.** 2200-4000. **Qualifications : Essential** : (i) Three years' Diploma/Bachelor's degree in Veterinary Science/Master's degree in Microbiology/Zoology / Chemistry / Biochemistry. OR Equivalent qualifications in the relevant field. (ii) Five years' experience in the relevant field. **Desirable** : (i) Master's Degree in Bio-technology. (ii) Training in Recombinant DNA techniques and other associated techniques using bacteria, virus etc.

7. **Technical Officer T-6 (Cancer Research) : One Post (Un-reserved). Rs. 2200-4000. Qualifications : Essential** : (i) Three years' Diploma/Bachelor's degree in Veterinary Science/Master's degree in Microbiology/Cell Biology/Zoology/Biochemistry/Bio-technology. OR Equivalent qualifications in the relevant field. (ii) Five years' experience in the relevant field. **Desirable** : (i) Master's degree in Bio-technology, (ii) Training in bio-technology, Cancer research DNA recombinant technique and associated training with it.

8. **Technical Officer T-6 (Para Haemoprotesta). One Post (reserved for SC) Rs. 2200-4000. Qualifications : Essential :** (i) Three years Diploma/Bachelor's Degree in Veterinary Science/Master's Degree in Zoology/Bio-chemistry/Chemistry/Microbiology/Biotechnology OR Equivalent qualifications in the relevant field (ii) Five years experience in the relevant field. **Desirable** : (i) Master's degree in Bio-technology. (ii) Training in Production of monocional antibodies against cell surface antigens and similar antigens from protozoa and other parasites.

9. **Technical Officer T-6 (Immuno-Biology of Reproduction) Two Post : (Un-reserved). Rs.** 2200-4000 **Qualifications : Essential** : (i) 'Three years' Diploma/Bachelor's Degree in Veterinary Science/Master's Degree in Zoology/Bio-chemistry/Cell Biology/Chemistry/Physics. OR Equivalent qualifications in the relevant field. (ii) Five years' experience in the relevant field. **Desirable :** (i) Master's Degree in Bio-technology. (ii) Training in Recombinant DNA technique and associated techniques. Hormone assay procedure and other associated technique Embryo spleting enanuplation etc.

10. **Technical Officer (Stat.) : One Post (Un-reserved). Rs. 2200-4000. Qualifications : Essential :** (i) 'Three year's Diploma/Bachelor's degree in Statistics OR Equivalent qualifications in the relevant field. (ii) Five years experience in the relvant field or Bachelor's Degree. Two years experience for the Master's degree holders in the related field. **Desirable** : (i) Master's degree in the subject. (ii) Diploma in Computer Programming using basic and other advance languages. (iii) Candidates with previous working experience in ICAR sponsored AICRP on Animal Sciences will be preferred.

11. Assistant Engineer (Civil) T-5 :

One Post (Un-reserved). Rs. 2000-3500 (Revised). Qualifications : Essential : Three years' Diploma/Bachelor's degree in Civil Engineering. (ii) 3 years' experience in the relevant field for diploma holders. OR Higher certificate/diploma in the trade with five years' experience in the relevant field.

12. **Museum Curator, T-5 : 1 Post** (Reserved for SC) but general candidates may also apply and they would be considered if no suitable S.C. candidate is available for appointment. Rs. 2000-3500 (Revised). **Qualifications : Essential** : (i) Three years Diploma/Bachelors' degree/equivalent qualification in Museology from a recognised Institute. (ii) 3 years experience in the relevant field for diploma holders. **Desirable :** Some experience for Degree holders.

13. **T-5 Assistant Documentation Officer : Two Post (Un-reserved). Rs. 2000-3500 (Revised). Qualifications : Essential :** (i) Bachelor's Degree with Diploma/Degree (B. Lib.) in Library Science. (ii) Three years experience for diploma holders. (iii) Experience in Documentation work. **Desirable** : (i) Experience of working in University/Institutes/Council or any other organisation of repute in the relevant field. (ii) Knowledge of a foreign language. (iii) Science Degree.

14. **Security Officer : Two posts (Unreserved) Classification : Auxiliary post-Rs. 2000-3500 (Revised). Qualifications** : Degree of a recognised University or Equivalent. Preference will be given to suitable Ex-Officers of the Indian Armed Forces, Para-military Forces, Central Industrial Security Forces, Police etc.

15. **Hindi Officer : Three Posts (Two Un-reserved & one reserved for S.C.) Rs. 2000-3500.** These posts will be filled-in on deputation basis by transfer of Officer from other ICAR Institutes/ICAR Headquarters who are:

(A) (1) holding analogous posts OR (2) with 3 years service in posts in the scale of Rs. 550-800/900 or equivalent, OR (3) with 8 years service in posts in the scale of Rs. 425-700/800 or equivalent, and (B) Possessing the educational qualifications and experience laid down for direct recruits as mentioned below.

(Period of deputation including period of deputation in another ex-cadre post held immediately preceding this appointment in the same Organisation/Department shall ordinarily not exceed 3 years). OR By direct recruitment. **Qualifications: Essential :** (i) Master's Degree of a recognised University or equivalent in Hindi with English as a subject at the Degree level OR Master's Degree of a recognised University or equivalent in English with Hindi as a subject at the Degree level. OR Master's Degree of a recognised University or equivalent in any subject with Hindi medium and English as a subject at the degree level. OR Master's Degree of a recognised University or equivalent in any subject with English medium and Hindi as a subject at the degree level. (ii) 5 years experience of terminological work in Hindi and/or translation work from English to Hindi or vice versa preferably of technical or scientific iiterature OR 5 years experience of teaching research, writing or journalism in Hindi . **NOTE:** Qualifications are relaxable at the discretion of the ASRB in case of candidates otherwise well qualified. **Desirable** : (i) Knowledge of Sanskrit and/or a modern Indian Language. (ii) Administrative experience (iii) Experience of organising Hindi classes or workshops for noting and drafting.

16. **Training Assistant Agriculture T-4 : Rs. 1640-2900. One post (Un-reserved). Qualifications : Essential** : (i) Three years' Diploma/Bachelor's Degree in the relevant field i.e. Agriculture. (ii) Three years experience in managing a cattle farm/organising extension/training programme in the relevant field for Diploma holders. **Desirable** : (i) Good knowledge of Hindi. (ii) Experience of working in the field for organising extension/training programme for farmers/farm women.

17. **Senior Hindi Translator-Two posts (one reserved for S/T. one unreserved). Rs. 550-800 (pre-revised). Qualifications : Essential** : (i) Master's Degree of a recognised University in Hindi/English with English/Hindi as a main subject at Degree level. OR Master's Degree of a recognised University in any subject with Hindi & English as a main subject at degree level. OR Master's Degree of a recognised University in any subject with Hindi/English medium and English/Hindi as a main subject at degree level. OR Master's Degree in Hindi/English or any other subject with Hindi/English medium with English/Hindi as a main subject or as medium of examination at degree level. (ii) Recognised Diploma/Certificate course in translation from Hindi to English and vice-versa or two years' experience of translation work from Hindi to English and vice-versa in Central/State Govt, offices including Govt. of India Undertaking as well as Indian Council of Agricultural Research of its Research Institutes.

18. **Projectionist-cum-Cine Mechanic T-II-3 : One post (Reserved for Scheduled Caste). Rs.1400-2300 Qualifications : Essential** : (i) Three years' Diploma/Bachelor's degree in the relevant field. (ii) At least 3 years' experience for Diploma holders OR Higher certificate in the trade with 5 years experience in the relevant field.

19. **Draftsman T-II-3 : Two posts : (one Civil Draftsman-unreserved and one Electrical Draftsman-reserved for Scheduled Caste). Rs. 1400-2300. Qualifications** : Essential : (i) Three years' Diploma/Bachelor's Degree in relevant field (ii) At least 3 years' experience for Diploma holders. OR Higher Certificate/Diploma in the Trade with 5 years' experience in the relevant field.

20. **Instrumentation Supervisor T-11-3. One post (Reserved for Scheduled Caste). Rs. 1400-2300. Qualifications : Essential** : (i) Three years' Diploma/Bachelor's Degree in instrumentation Engineering. (ii) At least 3 years' experience for Diploma holders OR Higher Certificate in the trade with 5 years' experience in the relevant field.

21. **Junior Mechanic-Psychomatric Chamber T-2 : One post (Reserved for Ex-Servicemen). Rs. 1200-2040. Qualifications: Essential** : (i) At least one year's Trade Certificate i.e. in Refrigeration. OR Matriculate with five years experience of working in the relevant field. **Desirable** : (i) Higher Certificate/Diploma in the course. (ii) Two years' experience in the field.

22. **Lab. Technician T-2 : Two posts (Unreserved). One post for Carces Utilisation Plant & Bioproducts Technology Laboratory and one post for Experimental Slaughting House & Pilot Plant. Rs. 1200-2040. Qualifications : Essential** (i) Matriculate with one year's certificate in the relevant field. OR Matriculate with 5 years' experience of working in the relevant field. OR Intermediate/equivalent qualification in the relevant field. **Desirable** : Diploma in the relevant field.

23. **Junior Library Assistant T-2. One**

post (Reserved for Scheduled Caste). Rs. 1200-2040. **Qualifications : Essential :** (i) Matriculate with at least one years' certificate in the relevant field. OR Matriculate with 5 years' experience in the line. **Desirable :** Diploma in relevant field.

24. Mechanic Generating Set T-1 : One post (Reserved for Scheduled Tribes). Rs. 975-1540. Qualifications : Essential : (i) At least one year's Trade certificate, OR Matriculate with 5 years' experience in the respective field. **Desirable :** (i) Higher certificate/Diploma in the Trade (ii) Two years' experience in the relevant field.

25. Chargeman Electrical T-1 : One post (Un-reserved) Rs. 975-1540. Qualifications : Essential : (i) At least one year's Trade certificate in Electrical Trade. OR Matriculate with 5 years' experience of working in the respective field. **Desirable :** (i) Higher certificate/Diploma in the Trade. (ii) 2 years' experience in the relevant field.

26. Rfeg. Mechanic T-1 : One post (Reserved for Ex-Servicemen). Rs. 975-1540. Qualifications : Essential : (i) At least one year's trade certificate i.e. in Refrigeration & or Mechanical trade. OR Matriculate with 5 years' experience of working in the respective field. **Desirable:** (i) Higher certificate/Diploma in the relevant field. (ii) 2 years' experience in the relevant field.

27. F.S. Dairy T-1 : One post (Un-reserved). Rs. 975-1540. Qualifications : Essential : (i) Matriculate with atleast one years' certificate in relevant field. OR Matriculate with 5 years' experience of working in the respective field. **Desirable :** Diploma in the relevant field.

28. Driver—Three posts (One reserved for Ex-Servicemen and two Un-reserved). Rs. 950-1500. Qualifications : Essential : (i) Should possess a current appropriate Motor Driving Licence and should have experience of Driving the vehicle at least 3 years. **Desirable :** Middle School standard pass (ii) Experience as a Motor Mechanic.

29. Compounder—Two posts (Un-reserved). Rs. 1200-2040.

Qualifications : Essential : (i) Matriculation or its equivalent (ii) Should be a Pharmacist registered under Sub Section 31-C of Section III of Pharmacy Act, 1948 with two years' experience as Pharmacist/Compounder/Dispenser.

Method of recruitment : (i) By deputation, the period of deputation being three years extendable by one more year. By deputation from amongst the suitable employees of the Cental/State Government Hospitals/Dispensaries or Hospitals/Dispensaries wholly financed by the Central/State Government who have three years' experience as Compounder/Pharmacist/Dispenser. (ii) Failing (i) above, by direct recruitment.

30. Security Supervisor—Two posts (Un-reserved) Rs. 1400-2300. Method of recuitement : (i) By deputation amongst the employees of the appropriate grade from ICAR headquarters/institutes having 3 years experience in the field (ii) Failing (i) above, by deputation of suitable employees of the appropriate grade of Central/State Govt./Autonomous Organisations wholly or substantially financed by Central/State Govt. having 3 years' experience in the security work. (iii) Failing (i) and (ii) above, from suitable retired Junior Commissioned Officers from the Indian Army appointed on regular basis through the normal channel of recruitment subject to a probation period of 2 years.

Note : *In fields where the duration of Diploma Courses available in the country is only two years, the minimum qualification will be two years Diploma intead of three years Diploma. The candidates already employed should apply through proper channel or furnish a 'NO OBJECTION CERTIFICATE from their Employer. The number of posts can increase or decrease. T.A. will be paid to SC/ST, un-employed candidates called for interview as per rules. The prescribed educational qualification are the minimum and mere possession of the same does not entitled the candidates to be called for interview. When the number of applications received in response to an Advertisement is larger and it will not be possible or convenient for the Institute to interview all the candidates for interview to reasonable limit on the basis of qualification and experience higher than the minimum prescribed in the Advertisement or by holding a screening test. **The unemployed candidates for the post from Sl. No. 14 to 22 should be registered with the respective Employment Exchange and the registration should be valid upto the date of interview.**

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Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157

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UNIVERSITY NEWS

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No. 37 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Prof. M. Ruthnaswamy Centenary Endowment Lectures—II

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MEANINGS IN HISTORY

B. Sheik Ali*

For some years past I have been concentrating on theoretical aspects of History, such as its nature and scope, value and purpose, form and structure, philosophy and methodology and meanings in history. This is a fascinating area which to a reflective mind would give more insight into man's life than all the metaphysical volumes ever published. A man acquainted with history would have lived in a way from the beginning of the world. Cicero rightly said, "Not to know what took place before you were born is to remain for ever a child". History gives us the meaning of life. Man starts to search for the purpose of life. He puts such questions as why and how do I live? Where have I come from? In this search for the reality of the past, he comes to know that he has built institutions; he has waged wars; he has made peace; he has invented thousands of things to make his life comfortable. Such knowledge gives him insight into man's life and action. This knowledge helps him to meet new challenges more soberly and intelligently, not emotionally and superficially. Despite man's ability to control nature and even to land on moon, he has not yet learnt to control his own nature, his own emotions and ambitions. A knowledge of the past as to how he has suffered by his refusal to learn from history may help him to correct himself. The struggle of man to carry truth and justice into the administration of human society, the rise and fall of several cultures, the impact of great ideas on the flow of life, the character and deeds of great men in the high drama of life, the bitter fight of good and evil in a perpetual battle, all offer some meaning to man, whose significance is essential for the survival of man. This is a vast subject as deep as the sea, and I wish to present here only a few drops from the ocean.

To perceive meanings in history is nothing but to find philosophy in motion. History is philosophy teaching by examples. To exist is to change, to change is to mature, to mature is to make progress, and to make progress is to attain culture. It is the culture or the creative ability of man to realize the best he is capable of, which is the purpose of life. History tells us whether he has done this or not. History is not only knowing, conserving and understanding of the past but also of completing what has been going on from the past. Man observes that past also when he was savage and brute, beholds that garden also which he created out of jungle and casts an eye on those dizzy heights also where he could build a glorious monuments for the future. History is the flow of man's genius from the past through the present to the future.

To a reflective mind there seem to be only two realities in this universe. One is nature and the other is history. Nature is all that which God has created, the physical world, the cosmos, the stars in the sky, and bees in the Sun, the flowers in the green hills, and everything

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and anything you observe around. To understand this we need knowledge, not superficial but deep. Only a botanist would tell us how leaf is a factory that does the wonderful job of converting one gas into another, on which we survive. Everything in nature is beautiful and perfect. On the other hand, whatever man has done is history. Man observes the nature, gets an image of the potentialities of nature, uses the environment to his advantage and stirs his imagination to build something. This action is done instinctively, intuitively, rationally, collectively or singly in order to comprehend the world in relation to his own life. In other words, although reality or existence is one, its knowledge assumes a dualistic character, one branch becomes Science and the other, history. Whatever is done outside man is Science, and whatever man does is history. There are only two doers or creators, God and man. God's work is related to Science, and man's, to history. The property exists in molecules and atoms to be split or combined, and when they are split or combind. wonderful results follow. This inherent property in atoms is gifted by God or nature, but actually the splitting of atoms to release energy is done by man, and when he does this, he is making history.

Both nature and man are mutually complementary. Man could not have split the atoms, if atoms had not existed. If man had not thought of splitting the atoms, atoms would have remained atoms, and we would not have atomic energy. Man understands the property, character, nature and uses of the things around him, and so uses his intelligence as to improve the quality of his life. Knowledge of nature or God is not so simple as to come within the grasp of the common man. It requires a man of higher culture, a scientist, a philospher, a thinker, a prophet, a poet, a statesman, who would first understand the problem, observe the phenomenon, know the reality and grasp all its essence. This is the job of a Scientist who wants to know the truth. Then comes the man, who meddles with the nature and builds something out of it. His deeds form the core of history. It is like the child which gets excited at the toy, plays with it for sometime, and ultimately he breaks it only to know how it works. This curiosity to know how it works is the first step to build; the child may not immediately make a similar toy when he is young, but later when he grows up he could make not merely a similar toy but a better one. This is what happens in history.

The ramifications of building is highly complex. The law of nature, although most wonderful, is conditioned to a set plan, but in history there is greater complexity which exceeds that of nature. I often bring the sweet creature, our cow, the poem of pity, to explain my point. The cow grazes green grass today but gives white milk tomorrow. At least this phenomenon is constant in nature, but in history Brutus is friendly today but pierces the dagger tomorrow. Nature is subject to the physical laws of the world, which could be objectively analysed. But history unites the objective side with the subjective. It has to comprehend what has happened, an objective factor, and to narrate it, a subjective factor. Napoleonic exploits assume different meanings on either side of the British Channel. Asoka, Akbar and Shivaji are different to different people. H.G. Wells thought that Asoka was unique among the tens of thousands of monarchs that passed the corridors of history, but Raychaudhri holds him responsible for the downfall of the Mauryan empire. Vicent Smith's perceptions of Akbar are different from our own, and Maharashtra historians do not agree with Jadunath Sarkar on Shivaji. Since the historian is both an investigator and a story teller, he is both a scientist and a poet, uniting in himself the objective and the subjective. This union of two functions is of higher order, which differentiates history from other Sciences.

History and science differ on other planes as well. Man in history is not a passive spectator of nature but an active doer who changes the shape of things around him. He conceives of an idea and executes the deed which results in something unique. He sees a river flowing, which he not only admires but puts a dam across it to fertilise the valley down below. A quarry is cut to build either a Taj or a Temple, a castle or a cathedral, a Nelson or a Buddha. He does this under the inspiration of either intuition, instinct or reason. Nevertheless, he is the doer, the maker and the architect of his destiny. Many a time his plans go astray and he feels frustrated, and yet he keeps on the journey. During the Second World War, he boasted that the war he was fighting would be the last war of mankind, but in reality since that he has fought scores of other wars, The respite he gets after the war is used for preparing for the next war. There is no end to the complexity of his problems.

The two aspects of existence, nature and history, run counter to each other. (1) Nature is a realised actuality in a state of perfect stability. It exists in space and is governed by its rigid and determinable laws. But history is in a state of incessant becoming, which fulfils a unique life-course in the time process. Its laws are highly flexible. Its movement is only in one direction, from the past through the present to the future, never reversing its path. (2) Nature is subject to the necessity of cause and effect in the relationship of existing objects with repetition as a constant factor—the seasons of the year, the blooming of the garden, the regularity of night and day, the potentialities of the elements, all well within the rules of observation, experimentation, and generalisation. But history does not conform to this pattern. Historical facts originate from nothing. They are the products of human mind, not subject to the laws of cause and effect. Historical laws are abstract. They relate to interaction between groups and individuals, who in their own turn interact with environment with varying degree of impact. A few of the great men conceive of a pattern to convert potential ability into creative energy, and the masses follow that pattern, but the intensity of work, the pattern of design, the style of functioning, and the degree of success differs from group to group, country to country and age to age. (3) In contrast to this what happens in nature is mechanical uniformity of quantitative timeless variety. History is subject to process thought where the linkage of one event with another produces remarkable chain reaction, whereas nature is subject to predictable and uniform pattern. (4) History produces destiny men, but nature produces causality men. Those who change the shape of the world become destiny men. Buddha, Confucius, Jesus, Muhammad, Gandhi, poets, inventors, philosophers, scientists, etc. are all destiny men and the rest who just do biological functions are causality men, who have nothing to do with history. In other words for men to have a place in history, they have to do something great or unique, which is termed destiny. Since the goal of history is to produce destiny men, history should find a place in the scheme of things men adopt, for history acts as the human jet propeller motivating men to become miracle workers.

History invites us to find its meaning in yet another way. All knowledge could be classified into theoretical, practical and productive, which we now know as the humanities, sciences and technology. The first deals with the knowledge of the truth, the second with the ability for practical actions and the third with the process of making things perfect. History is the only subject which is a mixture of all these three branches of knowledge. This is because of the essence of history which is culture, and culture is defined as that complex whole which includes knowledge, belief, art, morals, customs and any other capabilities and habits acquired by man as a member of the society. To build this culture, he needs all the three instruments of knowledge, the theoretical side of what the truth is, the scrutiny of its ability to become a reality, and the conversion of a concept into reality. Things in nature do not have a principle of motion and do not pass from one state to another unless an external agency is employed for the purpose. But history is so dynamic that it is constantly on the move, and the pattern changes from time to time and country to country. The geological formation of the earth a million years ago was not much different from what it is today. The reproductive organs of the animates were the same a million years ago as they are to-day. But India of April 1947 is essentially different from India of April 1987.

Growth in nature is because of inherent potentiality within the system which occurs in spontaneous regularity. If we sow the seed it germinates, becomes a plant and a tree, and bears branches, leaves, twigs, fruits and flowers. Growth in organic things is subject to known laws. But historical growth is subject to different principles at different times in different countries. Many a time wars are averted by peaceful diplomacy, but all efforts are vain at present to stop Iran-Iraq war. Accidents, chance, coincidence, necessity, law, logic, reason, religion, philosophy, any or all or such other factors, or a mixture of some of these would become potent factors for causality in history. We never know what elements, in what proportion go in the formation of a culture. Material cause, formal cause, efficient cause and final cause, all are required to evolve a culture. Material factors relate to land, labour, resources, climate and all physical things; formal factors relate to human agency to exploit the resources and to co-ordinate the production; the efficient cause relates to unity, harmony, will-power and the cooperation of all agents in the process to enable the project to be a success; and the final cause is the clarity of the goal, the perception of the destiny and the intrinsic worth of the objective in view. Given a happy blending of these four elements, thinkers say, the engines of history move, and progress is made. But the composition of this structure is so complex that nothing could be said with certainty.

Let us search for the meaning of history in yet another way, the Toynbeean way. According to Arnold Toynbee the intelligible fields of historical study are societies which have greater extension in space and time than national States or city States or any other political community. Societies are the atoms of which history is composed. Societies produce civilizations, a species of Society. He poses the question why do some societies produce civilizations and others do not. His Answer is that the genesis of civilisation is due neither to the race factor nor to geographic environment but to a specific combination of two conditions, namely the presence of a creative minority and a set of circumstances which are neither too unfavourable nor too favourable. The emphasis here is on two factors. One is creative minority or dynamic leadership, a set of people who are intelligent far-sighted, hard-working and competent. This creative minority is comparable to the brain in human body, and to the intellectuals in the society. The second factor is the kind of opportunity, an environment, a situation or circumstances which is just perfect, just optimum, neither favourable nor unfavourable. Too favourable a situation would take away the excitement, and too unfavourable would frustrate the efforts. If the soil is too rich in the garden, not the flowers but the foliage would be profuse; if it is too poor nothing grows there.

When these two conditions are fulfilled, a peculiar phenomenon called challenge and response takes place. The birth of a civilization is the product of the interplay of these challenges and responses. Challenge poses the issue and response offers the solution. The life of mankind from individual to society level is governed by this principle of challenge and response. The moment a baby is born, the challenge for its survival starts, and then follow a series of other challenges—schooling, passing the exams, getting a job, moving up in the job, marriage, rearing of children, educating them, marrying them, all are challenges. The interval from birth to death is filled by challenges. Success in life would depend upon what type of responses are offered and with what effect. Some remain at LDC level, and others reach Ruthnaswamy level. The same thing is true of a society, which has to face many, many challenge before it ushers itself into civilisation phase. The environment challenges the society, and the leadership responds to them. A new challenge follows and a new response ensues, and the process continues with no possibility of rest, until the society emerges into culture.

All cultures have emerged exactly in the same way. Let us take our struggle for freedom. Can we imagine what challenges and what sufferings it created; and for how long and for how many people it affected before independence was achieved. Once this challenge of freedom was met, other challenges stared before us, of partition, of communal roits, of integration of princely States, of Kashmir, of Hyderabad, of food problem, of Pakistan war, of China war and so on. We met all these. Our green revolution solved the food problem. Our defence preparations effectively answered the Pakistani threat. Then other challenges confronted us, of over-population, of unemployment, of poverty, of integrity and unity, of linguistic, regional, caste and communal problems and so on. Hopefully, we may solve these as well. When all this is over, we may hope before the end of century India may emerge among the powers of the earth in invention and industry, in wealth and trade, and in knowledge and wisdom to teach humanity "the tolerance and gentleness of the mature mind, the quiet content of unacquisitive soul, the calm of the understanding spirit, and a unifying, pacifying love for all living things, "which would herald the dawn of a new culture.

Once the civilisation is born, how does it grow is the next question. The growth of a civilisation is neither due to geographical expansion, nor technological progress nor mastery over physical environment, but due to a progressive and cumulative inward self-direction, or self-articulation of the civilisation. Here it looks as if Toynbee has become an exponent of Indian philosophy. He tells us that real progress lies in drawing oneself within, in one's own inherent faculties, to reflect on one's own potentialities, and to bring them up to the fulfilment stage. He warns everyone, "no help coming, stand on your own". Look within, you have everything. He urges both inward-self direction and also self-articulation, the **Dharma** and **Karma** stage; both are essential. The **Dharma** and **Karma** lead to cumulative 'etherialisation' of the society's values and simplification of civilisation's apparatus. The higher we move, the cooler it becomes, more gentle, more refined, more simple, natural and profound. The Buddha and Gandhiji underwent a metamorphic change in their later life. Buddha left his hearth, home, wife, child, power, kingdom, authority to be enlightened under a tree. Socrates drank the cup of hemlock. Jesus went up the cross. Gandhiji changed the pattern of his life to become Mahatma. This is 'etherialisation, where values gain new meaning. If one is lost in matter one's mind gets corroded.

Toynbee introduces yet another concept to explain the growth phase. It is by the mechanism of withdrawal and return. Here he comes close to Fichte and Hegel who have used the dialectics of thesis, antithesis and synthesis. Toynbee's analysis of the march towards progress is not on a straight path but through twists and turns, withdrawal and return, differentiation and integration, conciliation and firmness, conquests and consolidation, and softness and hardness. A train moves backwards before it pulls forward. A bowler goes off the pitch only to return to throw the ball with greater force. All work and no play makes Jack a dull boy. Hence, the withdrawal and return theory suits for the growth phase.

Finally, who do cultures decay ? Toynbee's verdict is that civilisations perish, not because they are murdered, but because they commit suicide. It is not an external agency that destroys a culture; it is the loss of fire within the system; it is the absence of unity, harmony and cohesion within the society. Indian history is replete with instances to support this point. The Ghori and the Mughal invasions, the French and the British empire in India were all due to internal disunity rather than inherent superiority of the foreigners. Nemesis overtakes good fortune, because creative minority loses its creativity and succumbs to the disease of self-interest. Consequently the society loses its will to live and commits suicide.

What sort of meaning Hegel finds in history ? It was Hegel before Marx who made human labour the prime motive force of historical process. It was he who gave us the concept of history as "process thought", a process in which something fresh comes out every moment, and hence history is not subject to immutable laws. History has a plot, a scheme, a theme, a pattern or a style, which a painstaking researcher has to unfold. Hegel leaned on metaphysics and thought that history fulfils God's purpose, and man's knowledge has reached the level of knowing that purpose. This purpose according to him is the realisation of human freedom. Freedom involves acceptance of law, and those who disobey law will again distroy freedom. All men are free in essence, and only those who take liberty with freedom would ultimately kill freedom. Hegel attempted to unify the opposites, spirit and matter, ideal and real, universal and particular. He stood both for idealism and realism at once. He applied his dialectic of thesis, antithesis and sythesis to the growth of culture, which he thought was the result of the interplay of two opposite forces, the positive and the negative. Something new that emerges is positive and something old which is rejected is negative. We give up childish habits as we grow, and accept again childish tastes when we grow old.

What is very significant in Hegel is his view that history is spirit, the essence of which being freedom manifests itself in legal, political, social and religious institutions. Every age is a step in the journey towards freedom. He expounded the idealistic theory, the keynote of which is the religious spirit. He typifies Judaism with duty, Confucianism with order, Islam with justice, Buddhism with patience, Hinduism with tolerance, and Christianity with love. Take away these ideas or spirit from them, and they would become hollow. The pattern of culture evolved by those who professed these religions conformed to a great extent to the ideals they had fixed.

From the earliest time of history-writing which began with Herodotus, well known as father of History, new meanings have been discovered in history. Whereas Herodotus was merely a story teller, his successor, Thucydides, who came only 13 years later synthesized historical facts to yield general principles, and found new meanings in the events of man. This had made him a moralist unsurpassed. A few examples may be cited to explain the point. (1) After describing the futility of the Peloponnesian war, he asserts, "revenge though sweet is never successful,

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though it may be just". How true, if only mankind could learn a lesson ! (2) "Not every brave man wants war". Greed, ambition, inferiority complex, psychological, political social, economic, personal factors also contribute to the war. (3) "Justice is better than expediency" is a dictum he offered to the rulers to ensure peace. (4) He also warned them "Political injustice is worse than violence", and to beware "Nemesis follows upon good fortune". The law of nature is such that no man is always lucky. What a perceptive thinker he was when he says that "human nature is prone to transgression and to domineer over the weak, to be credulous, jealous, fickle, prone to error, vain but fundamentally the same". This is a correct analysis of human nature which he found in the pages of history.

All through history, thinkers have found new meanings in the events of the time. St. Augustine's **The City of God** in twenty-two volumes has been fashioned into one of the classics of all times. He found perfect beauty in God's work, and confused and shabby things in man's work. The least perfect institution man has devised is in the political field, where none of the systems he conceived from monarchy to democracy seemed to work well. Therefore, St. Augustine invites mankind to enter the City of God, the Church, the Celestial Kingdom, the divine foundation, intended to bring heavenly vision upon earth. He says that the kingdom of the Church was the reflection of the kingdom of Heaven. The earthly and heavenly cities are inextricably intermingled with each other. Nations have prospered when the ideals of the City of God were upheld, and disaster overtook them when those ideals were ignored. He argued that all the glory of the Roman empire would fade away before a single concept of the Gospel which would give greater solace to the distressed humanity. The grandeur of the Roman empire rested on the sweat, blood and tears of the common folk, but the City of God, the house of mercy, does not demand a single drop of blood. The City of God is based on Divine Love which would kindle a new light in the human heart. It would lead man to a State where the whole of man, his will, his intellect and his emotions could achieve a bliss in which the unitive condition with the Reality is attained. The ultimate purpose of the City of God is to make man live in essential unity or in communion with God. Thus, St. Augustine discovered spiritual meaning in history. This concept has excited the Catholics all through history. It strengthened a collapsing civilisation which under the glow of the Roman empire had degenerated into a dissipated society. It declared the political philosophy that God ruled human affairs, and it put God in history. It is rightly said, "in the majestic somnambulism of man which is called history, St. Augustine injected a dream into the mind of the sleep-walker which still charms and haunts man's mind—the doctrine of better laws and a higher soul".

Among the Arabs Ibn Khaldun found new meanings in history. He is the father of the Science of culture. He integrates the science of history with traditional political philosophy, which like medicine or navigation, is a skill to guide humanity. To excel in this art three qualifications are required, namely knowledge of the goal or end, knowledge of the State in which a society exists, and knowledge of what should be done to improve it. His anylysis has all the semblance of modern thought. He explains the events, examines their trend, enterprets their processes, analysis their causes, assesses their value, and thus draws proper conclusions which give us an insight into history. According to him history itself is an instrument for the acquisition of excellence in the art of ruling. His **Universal History** is the first book which deals with the science of culture, and in this work the most outstanding part is his introduction, **Prolegomena**, more than 300 pages discussing the nature of historical facts, their relationships, trends and problems, and their regularities and variations. He has examined social solidarity and its basis, climatic and occupational influences on group character, laws of social change and political stability, economic and religious influences on behaviour, all in so original and critical a manner that only the word 'genius' can describe him. His Introduction is so deep and comprehensive that it revolutionized historical thought, and that even a thinker of Toynbee's order rated his philosophy of history "as the greatest that has ever yet been created by any mind in any time or place". George Sarton assessed him as "the greatest theoretician of history, the greatest philosopher of man's experience, not only of the Middle Ages but of the whole period". It was he and not Auguste Comte who was the first Sociologist of the world. Sociologists have hailed him as the founder of the social and economic interpretation of history. Political scientists have ranked his writing with Aristotle. What is very significant in his thought is his enunciation of the principle that history has for its object all the social phenomenon of man's life.

From the Renaissance and Reformation time thinkers discovered a new spirit in historical framework which intensified the study of not merely external forces but also psychic and internal experiences. The political and dynastic history was regarded external, and the history of ideas, sciences, religious systems, philosophy and culture as internal. The great periods of history were not those when empires were built, but when exquisite pieces of art were created, systems of philosophy were evolved, great religions preached the truth and human mind soared high to scan cosmic consciousness. Nineteenth century was so rich in the interpretation of history that it has been termed as the century of history. Excited thoughts were presented to explain its meaning, in terms of enlightenment, humanism, pragmatism, romanticism, positivism, materialism and so on. History was used to discover national identity. Determinant factors were explored to explain causality. History was understood as necessary development of man's destiny, an inevitable march towards progress and an organic growth towards universalism and cosmopolitanism.

The new century humanised history and made it a centre of reality and thought. The transcendental conception of history was not called a revelation but an imperceptible guidance to man towards progress. The Romanticists advocated a possionate love of the medieval ideas such as adventure, chivalry, romance, crusades and wanderings in the castles and cathedrals. Pure reason was discarded and fancy took its place. Imagination played a vital part. Instinct was more at work than reason. Picturesque, poetic, sentimental and idealistic concepts were preferred. The Romanticists revived the mystic, passionate and capricious standards of the Middle Ages. But very soon these romantic trends were again changed.

Rationalism came back to find new meanings in history. The new School of Positivists felt that human knowledge could not go beyond human experience. This School regarded history as "Social Physics", which could reduce historical events to general principles. The exponents of this School styled themselves positivists, naturalists, sociologists, empiricists, and critics. Their desire was to reduce political phenomena to the level of other scientific phenomena where general principles were applied. Their aim was to liberate history from the hold of theology and metaphysics, and to introduce into the study of society the same scientific observation of the laws which prevailed in Physics, Chemistry and Physiology. In 1822 Comte published his plan for the reorganisation of Society, which became the Charter of Positive Philosophy. In this plan he rejected metaphysical idealities, and preferred the ground of observed realities by systematic subordination of imagination to observation. An understanding of the laws of society would enable the State not only to control the direction of history but also to predict the course of history. The aim of the Positivists was to discover similar laws for the interpretation of history as Newton had done for Physics.

Leopold Von Ranke is the high priest of "historicism" which means that history determines each event but does not justify it. He is called the "Columbus of modern History" who provided the scientific basis for the study of modern history. Nevertheless, it is he who said "God dwells in history", and he sees God standing in history. He sees divine punishment in the shallow treatment of history, and to him history is the proof of divine being. He observes, "In all history God dwells, lives, is to be seen. Every deed demonstrates Him, every moment preaches His name, but mostly it appears to me the continuity of history". The individuals and the nations are agents in a world movement. The mediating powers connected with God are what Ranke calls "ideas". The ideas are "the thoughts of God in the world...they are life-giving, are life itself, are moral energies". In the interaction of these ideas, in their coming and going, lies the great secret of history. His dictum is that every epoch stands in immediate relationship with God.

The Italian philosopher Giambattista Vico (1668-1744) sees something different in history. To him history was not to be looked at merely as a register of crimes and follies, but a sympathetic response would yield many useful concepts. He removed the Cartesian notion that "history was at best a confused agglomeration of miscellaneous facts, at worst a tissue of fabrications and absurdities". Vico presented his view that the development of man's mind could be studied only historically, and that the entire phenomena from the primitive mode of living to the present day should be regarded as a growth, the progressive process, and the steady development to conquer nature and improve matters. The evolutionary process, or the genetic approach is the only way to get at the truth in history. Every theory must start from the point where the matter of which it treats first began to take shape. This view gave a new meaning to history, demolishing the old view that history was the product of human nature which never changes, that the people in the past looked at the things exactly in the same way as we do now, and that the forms of expression and institutions of the past were not basically different from what they are now. Such a change in outlook had great impact on historical thought. The myths, the legends, the fables, the philology, the traditions, the literary records are not comparable to what exists in nature in all countries at all times.

But the greatest contribution of Vico was his emphasis on giving special attention to languages in historical understanding. Many words change their meaning. A close study of the language would reflect the culture of the past. Unless one has a good grasp of Sangam literature, the culture of the period cannot be explained. Language would shed light upon environmental conditions of the time. It would indicate the type of response, behaviour or motive of the people in the past. Speech and thought are closely related. The Vedic language is spiritual; the epic language is secular; and the Sangam language is highly enlightened indicative of such profuse literature of an Academy that produced over 8000 poets. Thus the level of culture and thought are easily revealed in the language. If only the Indus script is deciphered our knowledge of the period would have a radical change. Language is the very essence of a society's culture which betrays its intrinsic values. The words "good morning", "good day" and "good night" for greeting are characteristic of the time consciousness of the western culture, unlike 'namaskar' or namaste' or the Muslim greeting of 'Salam' or 'Safety be on you'.

Another Italian thinker of recent times, Benedetto Croce (1866-1952) offered other meanings in history. He regards history as the work of 'One Spirit' which is the main principle of this universe. In every part and moment of history that spirit is wholly and indivisibly present and active, which extends to the utmost bounds of human experience. This **spirit** is wholly unified, absolute and omnipotent. But in its manifestation it takes four different forms, or grades, or aspects. These four aspects are aesthetic, logical, economic and ethical. In other words, history is the mansion of one great spirit which stands on four' pillars. This quarternity consists of art, reason business and ethics. The mutual interaction of these four produces a culture. Art or aesthetics is inherent in man from dawn of history. The richest treasures man now possesses of the past is in the realm of art, whether painting, sculpture, architecture or literature. Who would not be proud of the beautiful temple of Chidambram? A historian ought to be not a photographer but a painter to produce a **Mona Lisa**. Logic or reason is the second ingredient of history to interpret historical forces which present varying degree of complexity. Art enacts in history what is individualistic and logic enacts what is rational and universal. Art requires making, logic requires knowing. The other two aspects relate to material (economics) and moral (ethics) factors, which are as much required for making history, as the first two, art and logic. In Croce's analysis philosophy forms a constituent of history, giving history primacy over philosophy. He has liberated history from Science also, stating all history is thought, but science is objective and concrete, well within the experience of man. He made history as the pre-condition of science, in that history precedes science by offering historical particulars for scientific generalisations. Finally, Croce regards all history is contemporary history. The idea is not the occurrence of an event simultaneous with the present, but the revival or reconstruction of the past event in the historian's mind who is in the present. It is the present experience of the past that goes on in the imagination of the historian that constitutes contemporaneity in history.

Collingwood looks at the drama from a different angle. He says that the subject matter of history is not a general fact, such as a revolution, a custom or culture, nor is it a particular fact such as a war or a great personality, but it is thought. Mere experience is not history. The whole history would depend upon what kind of thinking has gone into it. History requires reflective thought. It works on the basis of the re-enactment of the past experience. One cannot see the past with one's physical eye, but it should be possible with his mental eye, which is his imagination. For instance, Asoka's renunciation of war creates an impression on our mind, as to how the destructive nature of the war prompted him to take a historic decision. The whole misery of the warfare, the sorrow, the suffering, is revived in our mind. A kind of contract is built up of the past with the present. Asoka becomes more relevant today when we possess more destructive weapons. Likewise the message of Geetha or Buddha or Jesus will always be as fresh at any point of time as during their own times. It this sense all history becomes contemporary history.

Thus history happens to be a supermarket of ideas from where thinkers have lifted their own shade of meaning. From the eighteenth century onwards new concepts such as the ideas of human perfectability, the inevitability of the historical process and the possibility of human control of the social process have added special meanings to history. The search for meanings in history resulted in the formulation of several social theories. Vico and Herder refused to concede that the past could be interpreted by the yardstick of contemporary reason. Comte attempted to bring history into the orbit of science. The result was not wholly successful. Bury cried history is a science no less and no more, but he too was compelled to admit that a little prejudice is an agreeable sauce in the historical dish. Marx attempted to give primacy to economic factors, and the impact was the opening of Pandora's box. Hegel and Croce stand at the other end and glorify Idealism and

Spirit. Turgot, Condorcet and Acton developed the idea of progress which supports the concept of unity of history. There has been an intensive search for meanings in history, a naive craving for unity at the expense of experience, an attempt to offer a rational interpretation of historical forces, and an effort to comprehend the real significance of the entire drama of life.

In conclusion it may be said that the special feature of history lies in its ability to offer to all thinkers, be they philosophers, sociologists, psychologists, economists, moralists, scientists, linguists, limitless scope to find meaning that suits their genius. It offers not merely a body of maxims from which "ordinary men could learn to be good and statesmen to be great" but examines in depth forces, social, political, economic and psychological, that shape the course of human progress. Man's unique creativity in any walk of life forms the core of history. History tells man what man is, by telling him what man has done. The proper understanding of man by man is the business of history. Any phenomenon or principle cannot be understood philosophically unless it is explained historically. Its utility cannot be denied. Even in a clinic the word **'history'** appears in bold letters on a prescription chit. A sense of immensity of time is essential for good citizenship, since it implies both reverence for the past and helpfulness for the past and helpfulness for the future. Subjectively expressed, history is a record of all that has occurred within the realm of human consciousness. Objectively treated, it deals with the creative output of the whole mankind. To understand its true spirit it demands awareness of oneself which is a reflective spirit that excites historical consciousness. A funeral procession disturbed Buddha so much that he renounced the world and attained enlightenment. The fight for freedom finally brought Arvind Ghosh to the stage of a great mystic. The love of God blessed Ramakrishna Pramahmsa with a true vision of spiritual reality. History offers the experience of the world as a kind of text for which reflection and knowledge act as the commentary so that mankind could learn how to judge of things past, to improve upon things present, and foresee things to come which would teach him what to follow, what to appreciate and what to avoid. This is the true and inner meaning of history. ☐

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CRISIS OF CHARACTER

Shri P.N. Bhagwati, former Chief Justice of India, delivered the Convocation Address at the 36th Convocation of the Maharaja Sayajirao University of Baroda. Shri Bhagwati feels that all our social, political and economic evils arise from a severe crisis of character. He is depressed at the lack of character which has become an all-pervasive feature of our social and political life and which we find in various forms and manifestations such as corruption, nepotism, struggle for power and position and in short, all forms of moral degradation. He asserts that this situation has to be changed and changed pretty soon" and lets go the clarion call "to transform the quality of our youth by inculcating in them the twin ideals of service and sacrifice, instilling in them a sense of social awareness and public commitment and injecting in their young minds the great constitutional values......" Excerpts :

Convocation

The entire future of our country, its growth and development, social, economic and political, depends on the young men and women coming out of our Universities. They are full of idealism and enthusiasm and if their energy can be channelised in proper direction, they can be a real asset to the nation. The students constitute a vast, yet untapped, human resource which can be utilised in the service of the nation. It is necessary to turn our attention to them and to guide, motivate and inspire them. There was a time in the days prior to independence, when leaders of the national freedom struggle used to visit colleges and talk to the students. They were men of great courage and integrity, outstanding in their profession or vocation and passionately committed to the cause of the country's freedom. They sought nothing for themselves. Their life was one of total dedication. It was an example for the youth to emulate and follow. But now, unfortunately, we have very few leaders of that eminence with the result that the younger generation is rudderless, without dynamic leadership.

It is, therefore, absolutely essential that persons who have distinguished themselves in their respective walks of life should seek opportunities to meet the students and talk to them in order to build a strong and powerful force in the service of the country.

Today, if we look around us, we find that we are facing a severe crisis of character and all our social, political and economic ills are the results of this crisis of character. Some disease or sickness seems to have overtaken us and we appear to be going down in a dark abyss from which it looks doubtful whether we shall ever be able to return. We see poverty and ignorance, want and destitution, dirt and sqalor around us, but that is not something which is so depressing as lack of character which has become an all-pervasive feature of our social and political life and which we find in various forms and manifestations such as corruption, nepotism, struggle for power and position and in short, all forms of moral degradation. Somehow or other, everyone today seems to be concerned more with himself, with his own power and position than with the country. Today love for the country appears to have vanished from our hearts. Sometimes, in a mood of frustration, I wonder whether it is possible for the country to sink any lower. But that is precisely why it is the duty of all of us to save the country from chaos and ruination and this we can do only if we are gripped by a higher ideal. Let us ask ourselves the question : Why were we all united and strong during the freedom struggle? Why were we ready to sacrifice everything, our property, our liberty, even our life, during the national movement for independence? There was a totally different atmosphere in the country then; every one was animated by a spirit of service and sacrifice. Why? Because Mahatma Gandhi had placed a great ideal before us—the ideal of freedom for the country. Our minds were possessed and our hearts were gripped with this great ideal and it evoked the highest and the best in us. Inspired by this great ideal, we forgot regionalism and linguism, castenism add communalism and became one nation, Indians first and Indian last. But today, unfortunately, we have no ideal before us, no higher loyalty to obsess our minds. We are drifting without any sense of direction and that is why we are thinking only of ourselves and not of our country. This is the situation which has to be changed and changed pretty soon. But, how is this to be done? Politics is not going to help here. No words of praise for one or abuse for another, no slogans or shibboleths, no large promises or high sounding phrases are going to be any assistance. What is necessary is to transform the quality of our youth by inculcating in them the twin ideals of service and sacrifice, instilling in them a sense of social awareness and public commitment and injecting in their young minds the great constitutional values which are enshrined in our constitution. We have to change the quality of our education and make it responsive to the socio-economic needs of our country. We need education which will build the character of our students because without character, no nation can survive and if we do not introduce character-building education, we might go the same way as did the Greek and Roman civilisations. It was Mahatma Gandhi who said; “What is education without character and what is character without elementary personal piety? Purity of character depends on purity of heart. Character cannot be built by morter and stone. It cannot be built by other hands than your own. Character-building comes from your very basis and really speaking it must come from within yourself”. There is a beautiful Chinese proverb which says: “Where there is purity of heart, there is beauty of character; where there is beauty of character there is harmony in the home; where there is harmony in the home, there is order in the nation and where there is order in the nation; there is peace on earth.” The entire educational effort must therefore be directed towards building of character and changing of the attitudes of our young men and wowen.

There is also one other rather unfortunate state of affairs to which I would like to draw the attention, particularly of the student community. We find that today the unity and integrity of the nation is theatened by the divisive forces of regionalism, linguism and communalism and regional, linguistic, and communal loyalties are gaining ascendancy in national life and seeking to tear apart and destroy national integrity. We tend to forget that India is one nation and we are all Indians first and Indians last. It is time we remind ourselves that the great visionary and builder of modern India, Jawaharlal Nehru said, “who dies if India lives; who lives if India dies?” We must realise, and this is unfortunately what many in public life tend to overlook, sometimes out of ignorance of the forces of history and sometimes deliberately with a view to promoting their self-interest, that national interest must inevitably and for ever prevail over any other considerations proceeding from regional, linguistic or communal attachments. The history of India over the past centuries bears witness to the fact that India was at no time a single political unit. Even during the reign of the Maurya dynasty though a large part of the country was under the sovereignty of the Mauryan kings there were considerable portions of the territory which were under the rule of independent kingdoms. So also during the Moghul rule which extended over large parts of the territory of India, there were independent rulers who enjoyed political sovereignty over the territories of their respective kingdoms. It is an interesting fact of history that India was forged into nation neither on account of a common language nor on accont of continued existence of a single political regime over its territories but on account of a common culture evolved over the centuries. It is cultural unity—something more fundamental and enduring that any other bond which may unite the people of a country together—which has welded this country into a nation. But, until the advent of the British rule, it was not constituted into a single political unit. There were, throughout the period of history for which we have fairly authenticated account, various kingdoms and principalities which were occasionally engaged in conflict with one another. During the British rule, India became a compact political unit having one single political regime over its entire territories and this led to the evolution of the concept of a nation. This concept of one nation took firm roots in the minds and hearts of the people during the struggle for independence under the leadership of Mahatma Gandhi. He has rightly been called the Father of the Nation because it was he who awakened in the people of this country a sense of national consciousness and instilled in them a high sense of patriotism without which it is not possible to build a country into nationhood. By the time the Constitution of India came to be enacted, insurgent India, breaking a new path of non-violent revolution and fighting to free itself from the shakles of foreign domination, had emerged into nationhood and “the people of India” were inspired by a new enthusiasm, a high and noble spirit of sacrifice and above all, a strong sense of nationalism and in the Constitution which they framed, they set about the task of building a strong nation based on certain cherished values for which they had fought. They enacted a Constitution which is one of the finest constitutional documents in the world. It reflects the high purpose and noble objective of the Constitution makers. It gives expression to the resolve of the people of India to constitute India into a sovereign socialist secular democratic republic and to promote amongst all its citizens, amongst other things, the unity and integrity of the nation. The Constitution makers were aware of the past history of the country and they were also conscious that the divisive forces of regionalism, linguism may one day raise their ugly head and threaten the unity and integrity of the nation particularly in the context of the partition of India and the ever present danger of the imperialist forces adopting new strategems apparently innocuous, but calculatd to destablise India and re-establish their hegemony and, therefore, they laid great emphasis on the unity and integrity of the nation in the Preamble of the Constitution and its various articles. You will thus see that under the Constitution the entire country is taken as one nation and every effort of the Constitution makers is directed towards emphasising, maintaining and preserving the unity and integrity of the nation.

But, unfortunately, we find that in the last few years, owing to the emergence of narrow parochial loyalties fostered by interested parties with a view to gaining advantage for themselves, a serious threat has developed to the unity and integrity of the nation and the very concept of India as a nation is in peril. The threat is obtrusive at some places, while at others it is still silent and it is masquerading under the guise of apparently innocuous and rather attractive clap-trap. The reason is that when the Constitution came to be enacted, we took the spirit of nationhood for granted and paid little attention to nourish it, unmindful of the fact that it was a hard-won concept. There is still time for us to halt this suicidal tendency and to protect and safeguard the unity and integrity of the nation by a conscious and determined effort. It is for you the youth of this country to assume leadership in this direction. My generation has failed the people of this country and it is for you, young men and women, to prevent the breaking-up of this country into fragments. You must forget all differences of caste, creed, race, language or religion and have only one thought uppermost in your mind, namely, that you are Indians first and Indians last. It makes no difference what religion you profess, what language you speak, what region you inhibit. It is a great country in which you are born. It is a country which has an imperishable culture which has survived over 5000 years. You are the inheritors of a great destiny and I appeal to you today, in the name of the future of India, to live up to the great values which are enshrined in our culture. We do not regard our country as an inert object nor do we know it as the plains, the rivers, the fields, the forests and the mountains. Our conception is different. We know India as the mother and we worship and adore it as Bharat Mata. She is old but not aged. She has passed through various vicissitudes. She has had her periods of glory and her periods of darkness. But like a rock she stands deathless and indestructible. She is today looking forward to a bright and glorious future. Let us not forget that we are the sons and daughters of Mother India and let us today resolve that we shall serve Mother India with a total sense of devotion and dedication.

We have fortunately a great tradition of serivice and sacrfice handed down to us by our ancestrals which has always emphasised the cultural and spiritual unity of this great land. The function of true education must be to create awareness in the students about the great cultural heritage of India. I want you to feel proud of being Indians. It is a privilege to be born on the Indian soil. We very often blindly imitate the west and look towards the west for enlightment, as if we have nothing of our own to offer to our people. But this, my young friends, is a great mistake. We have the finest talent in the world in every walk of life. We belong to a nation which has a priceless inheritance of which we should justly be proud. Let me remind you of the words of Swami Vivekananda when he said :

“The debt which the world owes to our motherland is immense. Civilizations have arisen in other parts of the world. In ancient and modern times, wonderful ideas have been carried forward from one race to another—but mark you, my friends, it has been always with the blast of war trumpets and with the march of embattled cohorts. Each idea had to be soaked in a deluge of blood. Each word of power had to be followed by the groans of millions, by the wails of orphans, by the tears of widows. This, in the main, the nations have taught, but India for thousands of years peacefully existed, here activity prevailed when even Greece did not exist. Even earlier, when history has no record and tradition dares not peer into the gloom of the intense past, even from then until now, ideas after ideas have marched out from her; but every word has been spoken with a blessing behind it and peace before it. We, of all nations of the world, have never been a conquering race and that blessing is on our head, and therefore, we live. . .". Therefore, my young friends, be proud of being Indians. Hold your heads high wherever you go and dedicate yourselves to the service of the nation.

But at the same time do not be insular in your approach or in your thinking. You should be ready to receive noble thoughts and ideas from all directions. Mahatma Gandhi once said : "I do not want my house to be walled in on all sides and my windows to be stuffed. I want the cultures of all the lands to be blown about my house as freely as possible. But I refuse to be blown off my feet by any." Our Vedic prayers also say: आ नो भद्राः क्रतवो यन्तु विश्वतः। You should not shun any new ideas and thoughts. Our education must foster innovation and criticism, debate and dissent. It should provoke the intellegentsia into abrasive behaviour. It should promote intellectual and cultural freedom with tolerance not only for the thought that we like, but also for the thought we hate, for it is only by discussion and dissent that there can be human progress, material as well as spiritual. No stronger plea for freedom can be conceived than Shri Shankaracharya's exclamation :

नोत्पद्यते विना ज्ञानं विचारेणान्य साधनैः ।

"Wisdom cannot be attained except by investigation and discussion." And there is no greater assertion of tolerance than in the following words from the Rig Veda :

संगच्छध्व संवदध्यं संवो मनांसि जानताम् ।

Let us come together, let us discuss and let harmony be thereby achieved. This should be the aim and objective of education.

We all must be imbued with a deep and profound sense of patriotism. We must learn to live a life of service and sacrifice for then alone we shall be able to raise the prestige of our nation and restore to our country the high illustrious position which it enjoyed in the past in the comity of nations. There can be no substitute for service and sacrifice. Let us not forget that we are living in a country which has a large number of people who are leading a life of want and destitution, misery and suffering. We have to serve the half-clad-half hungry millions of India. We have to dedicate ourselves to the service of the Daridra-Narayan. The great Swami Vivekananda said: "So long as the millions live in hunger and ignorance, I hold every man a traitor who having been educated at their expense pays not the least head to them". Therefore, my young friends, whatever be the walk of life in which you are placed, whatever be the position in life which you may occupy, high or low, do not forget that you owe a debt to the people of India and that debt has to be discharged. You have to make the vast masses of people in this country equal participants in the fruits of freedom and development and this you can do only if you lead a life of purity of character and service and sacrifice, त्याग and सेवा.

I will close with a beautiful dialogue between Mahatma Gandhi and Rabindra Nath Tagore. Once Gurudev Tagore asked Gandhiji: "Gandhiji are you so unromantic? When in the early dawn, the morning sun rises does it not fill your heart with joy to see its reddish glow? When the birds sing, does not your heart thrill with its divine music? When the rose opens its petals and blooms in the garden, does its sight not bring cheer to your heart?" The Mahatma replied "Gurudev, I am not so dumb or insensitive as not to be moved by the beauty of the rose or the morning rays of the sun or the divine music of the birds. But what can I do? My one desire, my one anxiety, my one ambition is: When shall I see the red tint of the rose on the cheeks of hungry naked millions of my people? When shall I hear the sweet and melodious song of the birds in place of their agonising sighs—when will such music come out of their soul? And when will that day come, when the light of the morning sun will illumine the heart of the common man in India? When will I see its lustre and brightness on his face?" My young friends, that day is still far off and it is for you, the youth of this country to bring it nearer and to fulfil the dream of Mahatma Gandhi.

Recent Publications

1. Handbook of Medical Education-1987	:	Rs. 45.00
2. Monograph on Sample Free Item Analysis	:	Rs. 50.00
3. Bibliography of Doctoral Dissertations in Social Sciences & Humanities 1983-84	:	Rs. 180.00
4. Educational Statistics at a Glance	:	Rs. 75.00
5. Education and Economic Development	:	Rs. 25.00

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CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
Sept. 21 - Oct. 4, 1987	Training Course in Research Methodology in Geography	To expose the participants to research methods in Geography and quantitative and cartographic techniques employed in Geographical research	Department of Earth Sciences, Manipur University, Imphal.	Dr. R.P. Singh, Dpartment of Earth Sciences, Manipur University, Imphal.
October 5-9, 1987	Short-term Course on Advanced Image Processing for Remote Sensing.	To appraise the scientists/engineers, working in the area of Image Processing and its Applications to Remote Sensing, regarding techniques, developments and future trends in the field of Image Processing.	Indian Space Research Organisation (ISRO) in collaboration with IIT, Bombay.	Dr. T.V. Pavate, Chief Project Engineer [CSRE], Principal Programme Coordinator (Training), ISRO-IIT (Bombay) Space Technology Cell, CSRE Building, Indian Institute of Technology, Powai, Bombay, 400 076.
November 16-20, 1987	Seventh National Symposium on Radiation Physics	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
November 25-27, 1987	International Conference on Mud Architecture	To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.	Ministry of Urban Development, Govt. of India, in collaboraton with the Govt. of Kerala, HUDCO and the All India Housing Development Association.	Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & & Urban Development Corporation, K.G. Road, Bangalore - 560 009.
November 26-28, 1987	International Seminar on Instrumental Methods of Electro-Analytical Techniques.	To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electroanalysis.	Indian Institute of Science, Bangalore.	Prof. M.H. Dhananjaya, Principal and Chairman or the Organising Committee, S.J. College of Engg., Mysore.
December 7-11, 1987	Seventh Triennial International Conference on Thin Films. (ICTF-7)	To take stock of recent progress in the field of science, technology and applications of their films.	Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.	Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.
December 16-18, 1987	International Symposium on Electronic Devices, Circuits and Systems	To provide a forum to research workers all over the world for exchange of information and technical perceptions in electronic devices, circuits and systems.	Indian Institute of Technology, Kharagpur	Prof. N. B. Chakravarti, Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur - 721302
December 18-19, 1987	National Conference on Role of Universities in Implementation of New Education Policy	The Conference will focus on Management of Higher Education, Improvement in Efficiency and New Strategies in Higher Education vis-a-vis New Education Policy	Association of Indian Universities in collaboration with Osmania University, Hyderabad.	Dr. V. Natarajan, Project Director (Exams) Association of Indian Universities, 16, Kotla Marg, New Delhi-110002

Future Plans of the Tamil University

The Tamil University, Thanjavur plans to establish some new departments and extend the work of existing departments. Their plans and programmes are as under :

The Department of Science will compile and standardise Tamil words corresponding to science, and will form the rules and regulations to coin suitable words.

The Department of Folklore will extend its work as per the aims and objectives of the department.

The Department of Rare Paper Manuscripts will concentrate on Social History of the Tamils based on the evidences found in the available rare paper manuscripts and publish it in 3 volumes.

The Departments of Ancient Industry, Under Water Archaeology and Epigraphy will study the nature of ancient and present 'Sea Voyages' of Tamil, Telugu, Malayalam and Kannada regions.

The Tamil University has also planned to expand the Tribal Research Centre at Udhagamandalam, and has decided to introduce the adult education programme among the Irulas. Siddha hospital will also be opened in the New Campus of the University very near to the Thanjavur Medical College.

The Linguistic Department will concentrate on Tamil grammar and its History, and publish it in 20 volumes. To highlight Sangam Literature, a separate Dictionary, Encyclopaedia and Glossary will be published.

There is also a proposal to study Tamil, Tamil Culture and Tamil Civilization of the Mauritius Tamils. Supply of Tamil textbook No. 3 to the Tamils of the Fiji Island has been planned and the work is now under progress.

Industrial Design Clinic

An Industrial Design Clinic (IDC), the first of its kind in the country, set up to improve the "health" of industrial products has been opened at the Indian Institute of Technology (IIT), Delhi. The clinic aims to help industries improve the designs of their products, to make them more efficient, reliable, and better suited to the conditions in which they are used.

According to Dr. S.K. Atreya, Project Coordinator, IDC engineers have taken up studies to improve the design and performance of a semiconductor—purifying device and a self-testing aid, both of which were developed by the IIT, Delhi, departments. Though IDC scientists have not yet identified any specific range of products to be covered, they would like to work for those industries which cannot afford design-departments of their own.

Dr. Atreya said the IDC will also examine various projects that senior IIT students and faculty members are working on, especially the products that emerge out of these projects.

Textile Diplomas Recognised

The Government of India is reported to have accorded provisional recognition to the three-year diploma courses in man-made textile technology and man-made textile chemistry awarded by the Board of Technical Examinations, Maharashtra, to the students of the silk and art silk mills research association, Sasmira, in Bombay. This is for the purpose of recruitment to subordinate posts and services under the Central Government.

Rapid Literacy Learning Programme

The Tamil University has started 57 new adult education centres in and around Thanjavur under its rapid literacy learning programme. The University has already completed two phases of the programme.

Recently the University conducted a two-day training programme for the Supervisors and Animators. Inaugurating the training programme, Dr. P. Chinnian, Registrar, Tamil University. explained the importance of the literacy for the adults and the role of the rural youth in the adult education movement. The various aspects relating to the adult education models of the Tamil University were also explained.

The model working for a short period of 3-1/2 months has been recommended by the Govt. of India for adoption by the Govt. of Tamilnadu.

Central University for Nagaland

The Prime Minister, Shri Rajiv Gandhi, is reported to have accepted the proposal of the Nagaland Government for setting up a separate University for the state. He however proposed a Central University for which a Central team would visit Nagaland soon to inspect the site and work out other details.

We Congratulate . . .

Prof. M.A. Viswamitra Chairman, Department of Physics, Indian Institute of Science, Bangalore who has been awarded the 10,000 US $ 1986 award in Biology by the Third World Academy of Sciences for his outstanding contributions to the understanding of DNA structure.

Peace Scholarship for Women

The PEO International Peace Scholarship Fund has offered financial support to partly meet the expenses required to pursue postgraduate programmes in Canadian or American universities or schools. Annual support of upto $ 3,000 is given only to women students. Further details can be had from Dr. Narain Mahishi, Secretary, Indian Institute of Science Alumni Association, Bangalore.

College Magazine Competition

The Government Postgraduate College, Dharamshala invites entries from colleges in the country for the 5th All India College Magazine Competition-cum-exhibition to be held in the college in Feb/March, 1988. Each college should submit one copy of the latest issue of its magazine to Dr. Atma Ram, Principal, Government Postgraduate College, Dharmshala-176215.

News from Agril. Varsities

Rabi Oilseeds Workshop

The Research Directorate of Narendra Deva University of Agriculture and Technology organised the 31st Annual Rabi Oilseeds Workshop in collaboration with the Indian Council of Agricultural Research from August 17-20, 1987. Inaugurating the workshop Hon'ble Chaudhary Narendra Singh, Minister for Agriculture of Uttar Pradesh called upon the scientists to develop restraint varieties for increasing the oilseeds production. Dr. M.V. Rao, the Special Director General, I.C.A.R. who delivered the keynote address and presided over the plenary session discussed various aspects of the oilseed research and expressed his concern at the oilseed production not keeping pace with the growth of population. He said that in view of the limited availability of the land, further progress in the technology for better yield per hectare would play a very important role in making the country self-sufficient in the field of oilseeds.

The participants discussed in the sessions the various aspects relating to Oilseeds research, viz., Genetics, Agronomy, Plant Pathology, Entomology, quality production, and future course of action. Dr. Shenoy, Special Secretary (Agriculture), Govt. of India, while presiding over the sesson on development expressed concern at the gap between what was being produced and the need for seed production programme.

Dr. R.K. Singh, Director of Research of the University, highlighted the achievements of the University in the field of oilseeds despite limited resources. According to him, the University scientists had successfully evolved NDT 8501 and NDT 8503, the two early strains of Toria for multiple cropping which were under advance testing.

Various speakers like Dr. M.V. Rao, Dr. Ranga Ray, Dr. P.R. Kumar, Dr. Mangla Rai discussed at length the important issues of hybrid varieties, quality improvement, Biotechnology, and casting models for mustard aphids—a menace for rapeseed and mustard.

The Vice-Chancellor, Dr. Kirti Singh, thanked the Indian Council of Agricultural Research for its generous support in providing a large number of research schemes and centres not only on oilseeds but also on other crops.

Low-cost Rice Cultivation Technique

The University of Agricultural Sciences, Bangalore, has developed a low-cost rice cultivation technique that promises to more than double the yeild by application of a new stem nodule green manure. According to Dr. K. Shivappa Shetty, university microbiologist, the technique involves treating seeds of the "sesbania rostrata" plant with a lignite-based bacteriel inoculant to form nodules on the plant's root and stem that are capable of fixing a high level of atmospheric nitrogen to make the soil rich. The yield from rice seedlines planted in this soil is almost twice that of conventional fertiliser-treated rice plants. Mere presence of moisture in the air was enough to activate the biological fixation reaction that produces nitrogen, he added.

Dr. Shetty said the green manure could be easily raised by farmers and its cost would be only Rs. 5 per hectare. Another significant advantage was that the plant was unaffected by insects, pathogens and soil properties that usually hinder nitrogen fixing capability. Dr. Shetty said the bacterial inoculant had been developed after a three-year research at the UAS.

Scanning Buffalo Erythrocytes

The scientists at Haryana Agricultural University have, for the first time, scanned buffalo red blood cells with the help of an Electron Microscope and come to the significant discovery that the red blood cells called erythrocytes are bio-concave discs in shape and have a smooth surface. This was revealed by Dr. R.M. Bhardwaj of the Department of Veterinary Medicine. He said that these red blood cells of buffaloes are sensitive to storage at 4°C. Dr. Bhardwaj and Dr. J.P. Rana, a postgraduate student, have been working on this problem for the last three years.

This discovery would further help in the cure of haemoglobunaria, a common disease of buffaloes in which animal discharges blood in its urine, becomes emaciated and ultimately dies. This disease is found mainly in high yielding buffaloes. Malnutrition and drought conditions increase the incidence of this disease.

HAU Training Programmes

The Haryana Agricultural University (HAU) has so far trained 4842 persons in 134 training programmes in different fields like crop production and management, animal production and animal rearing and many areas of home science. Dr. B. P. Singh, Associate Director (Trainings), said that these trainings ranged from 1 to 90 days as per the requirements of the trainings and the course contents. Amongst the trainees are not only farmers but also agricultural officers, engineers, administrators, farm women, anganwadi workers, etc. The university organises these trainings throughout the year.

News from UGC

UGC Delegation Leaves for GDR

Under the Indo-GDR Cultural Exchange Programme, a four member University Grants Commission's delegation led by Prof. K. Satchidananda Murty, Vice-Chairman, recently left for a visit to German Democratic Republic. During its 10-day tour of GDR, the delegation will visit universities and technological institutions, including the Institute of Education Management, Berlin, to review the progress made in the fields of existing bilateral collaborations and identify further possibilities of cooperation in the new areas.

Other members of the delegation included Prof. A.R. Kidwai, Chancellor, Aligarh Muslim University, Prof. N.S. Bose, Vice-Chancellor, Visva-Bharati and Prof. D.M. Nanjundappa, Vice-Chancellor of Bangalore University who is also the Member-Secretary of the delegation.

Awards & Medals

INSA AWARDS

The Indian National Science Academy (INSA) has recently announced the award of medals to outstanding scientists in recognition of their distinguished contributions in their respective fields. The recipients of the awards are :

(1) **Homi J. Bhabha Medal** to Professor S. Chandrasekhar, FNA, Raman Research Institute, Bangalore for his discovery of discotics in liquid crystals and his study of crystalline optical activity.

(2) **Sunder Lal Hora Medal** to Professor S.P. Raychaudhuri, FNA, Genetics Research Unit, Department of Zoology, Calcutta University, Calcutta, in recognition of his outstanding contributions to animal cytogenetics and cell biology.

(3) **P.C. Mahalanobis Medal** to Professor U.R. Rao, FNA, Chairman, Space Commission and Secretary to the Government of India, Department of Space, for outstanding contribution to satellite science and technology.

(4) **K. R. Ramanathan Medal** to Professor (Miss) Anna Mani, FNA, for outstanding contributions in the development of meteorological instrumentation, especially on atmospheric radiation and ozone, in India.

(5) **Chandrakala Hora Memorial Medal** to Professor N.B.K. Nair, FNA, Chairman, State Committee on Science, Technology & Environment & Secretary to the Government of Kerala, in the field of biodeterioration of materials exposed to marine environment.

(6) **INSA Vainu Bappu Memorial Award** to Professor Govind Swarup, FNA, Senior Professor, Radio Astronomy Centre, Tata Institute of Fundamental Research, Bangalore for his conception, design and fabrication of a cylindrical radio telescope of unique design at Ooty. The Ooty group, headed by Professor Swarup has done outstanding work in the field of extragalactic radio astronomy and cosmology.

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is open from 9-00 a.m. to 5-30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Sociology

1. Assakumari, V. *Socio-cultural dynamics of dowry among Nairs of Kerala*. Kerala. Dr. (Miss) Mariamma Joseph.
2. Jain, Mahendra Kumar. *Growth and decay of urban centres in Madhya Pradesh*. Devi Ahilya. Dr. K.P. Pothan.
3. Ushakumari, K.G. *Cancer detection delay syndrome : Socio-cultural determinants and pathological consequences*. Kerala. Dr (Miss) Mariamma Joseph and Dr. M. Krishnan Nair.

Political Science

1. Jose, K.K. *The relevance of Gandhism in the post-independence politics in Kerala*. Gandhiji. Dr. Cyriac Thomas.
2. Rajput, Bhagwat Singh. *Bharat mein rajnaitik dhruvikaran hetu Shri Jayprakash Narayan ka yogdan : Janata Party ke gathan evam vightan ke sandarbh mein*. HS Gour. Dr. G.P. Nema.
3. Siby George. *The impact of Indo-Soviet relationship in India's foreign policy, 1971-1986*. Gandhiji. Dr. Cyriac Thomas.
4. Simon, T.J. *The role of the Catholic Congress in the pre-independence politics in Kerala*, Gandhiji. Dr. Cyriac Thomas.
5. Sivadasan, E.N. *A comparative study of CPI (M) led coalitions and the CPI led coalitions in Kerala*. Gandhiji Dr. Cyriac Thomas.
6. Sreelatha, S *The legislature and developmental functions in Kerala since 1970*. Kerala. Dr. A. Bala Krishnan Nair.

Economics

1. Gopinathan Nair, N.D. *Growth, productivity and wages in the small industries of Kerala*. Kerala. Dr. P.R. Gopinathan Nair.
2. James, P.J, *An enquiry into economic roots of communalism in Kerala*. Kerala. Dr. S. Uma Devi.
3. Jayaram Nayar, M.L. *Corporate sector and working capital development in India*. Kerala. Dr. S. Uma Devi.
4. Muraleedharan Nayar, H. *Production condition under alternative system of Cropping : A case study of monocropping and multi-cropping of coconut in Kerala*. Kerala. Dr. E.T. Mathew.
5. Narayanan Nayar, Beena. *The relevance of Keynes Robertson controversy for India*. Kerala. Dr. S. Uma Devi.
6. Philip, P.J. *Capitalist farming and differentiation of peasantry in Kerala*. Kerala. Dr. K. Ramachandran Nair.
7. Rajeev, P.M. *Economic aspects of the market for hospital services in Kerala : A comparative study of public and private sectors*. Kerala. Dr. G. Karunakaran Pillai.
8. Satheesh Kumar, R. *Structure of markets for cash crops: An economic analysis with particular reference to Kerala*. Kerala. Dr. S. Uma Devi.

Commerce

1. Balakrishnan Nair, N. *Financial management in public sector and private sector industries in Kerala*. Kerala. Dr. C.N. Purushothaman Nair.
2. Manoharan Nair, K. *Problems and prospects of plantation industries in Kerala*. Kerala. Dr. M. Sarngadharan.

3. Ramalingam, N. *Leadership effectiveness in selected public sector undertakings in Kerala.* Kerala. Dr. C.N. Purushothaman Nair.

4. Thomas Koshy. *Role of non banking financial institutions in the industrial development in Kerala.* Kerala. Dr. M. Sarngadharan.

HUMANITIES

Philosophy

1. Sujatha, V. *A philosophical study of Ezhuthassen's Chintheratnam.* Kerala. Dr. K. Saratchandran.

Language & Literature

English

1. Amrik Singh. *A Semiotic perspective on Bernard Malamud : An interpretation of the Assistant, Dubins Lives and God's Grace.* HP. Dr. Som P. Sharma.

2. Chummar, V.O. *Ransom's contribution to the new aesthetics.* Gandhiji. Dr. T.V. Thomas.

3. Jagdip Singh. *Dark comedy in the plays of Joe Orton and Edward Bond.* HP. Dr. V.K. Khanna.

4. Joseph, Dolly. *Self and society in the fiction of Anita Desai.* Gandhiji. Dr. T.V. Thomas.

5. Joshi, Suresh Chandra. *Sri Aurobindo as a critic of English poetry.* HP. Dr. Som P. Sharma.

6. Lahiri, Pradip. *A critical analysis of the dramatic dialogue in the selected plays of Harold Pinter.* HP. Dr. B.S. Pathania.

7. Mahajan, Shakti. *Pain pleasure complexity in the poetry of Keats.* HP. Dr. A.K. Biswas.

8. Reeta. *Women characters in Mulk Raj Anand's novels : A psychological interpretation.* HP. Dr. H.R. Dhatwalia.

9. Setia, Sewa Ram. *D.H. Lawrence as a critic.* HS Gour. Dr. C. Sengupta.

10. Sharma, Dalip Kumar. *Existentialist themes in William Golding's novels.* HP. Dr. Som P. Sharma.

11. Sharma, Ishwar Dass. *Semantic universe of Raja Rao: A study of his stories.* HP. Dr. Som P. Sharma.

12. Thomas, V.J. *Edgar Lee Masters and Edwin Arlington Robinson : A study in comparison.* Gandhiji. Dr. T.V. Thomas.

13. Thomas, Varghese T. *The Syntax and semantics of tense and aspect in English and Malayalam : A contrastive study.* Gandhiji, Dr. C.S. Philipose.

14. Vadakkekunnel, Cherian. *Gothic atmosphere in the works of Emily Bronte : A re-evaluation.* Gandhiji. Dr. T.V. Thomas.

15. Varghese, aramma. *Imagery in modern Malayalam poetry and its connections with the first phase of modernism in the 20th century English poetry.* Kerala. Dr. V. Rajakrishnan.

16. Vashist, Uma Dutt. *Religious thought in T.S. Eliots plays.* HP. Dr. B.S. Pathania.

German

1. Kurian, Annie. *The image of family in the works of Heinrich Boll.* Kerala. Dr. Celine Mathew.

Sanskrit

1. Sangamnerkar, Laxman. *Baudh vaicharik paramparayen nirman tatha Shankar vaicharik paramparayen moksh : Ek tulnatmak sameekshan.* Devi Ahilya. Dr. B.D. Musalgaonkar.

Hindi

1. Bose, P.X. *Hindi mein adhunik bhasha vigyan ka itihas.* Gandhiji. Dr. N.R. Eladom.

2. Georgekutty, V.V. *Hindi kahanion mein nagarik parivesh.* Gandhiji. Dr. N.R. Eladom.

3. Helen, K.J. *Mahadevi Varma ke 'Yama' ka sameekshatmak adhyayan.* Gandhiji. Dr. K.K. Sathyanathan.

4. Puthenpuragil, Hareendran Cheeran Kandy. *Ashik ke upanyason mein Madhya vargiya chetana.* Gandhiji. Dr. N.R. Eladom.

5. Remeni, V.N. *Swatantrayottar upanyason mein nari swatantrata kee bhavana.* Gandhiji. Dr. K.K. Sathyanathan.

Tamil

1. Geetha, C.V. *Folk-lore in Tamil novels.* Kerala. Dr. P. Doctor Nazeemdeen.

2. Paul Raj. *Critical edition of Yapparunkalkkarikai.* Kerala. Dr. P. Padmanabhan Thampi.

History

1. Asha Devi. *Parmarkaleen sthapatya kala ka adhyayan: 10 vin shatabadi se 13vin shatabadi tak.* Devi Ahilya. Dr. J.C. Upadhya.

2. Santha, P. *Civic right movements in Kerala, 1850-1947.* Kerala. Dr. B. Sobhanan.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Patel, Swati Sumanchandra. *A psychological study of high achievers.* Gujarat.

2. Preet Kamal. *A study of mental health in the context of the home environment and the socio-economic class.* Rajasthan.

3. Ray, Anjali. *Identification of certain components of motivation present in the self-employed adults.* Calcutta.

4. Sharda Rani. *A study of the effect of motives, incentives and expectancy of goal attainment upon performance.*

Sociology

1. Gupta, Dinesh Kumar. *Socio-economic conditions of urban scheduled caste women in Indore Division.* Devi Ahliya.

Social Work

1. Dikshit, Ponnada Sanjeeva. *National Service Scheme in Andhra Pradesh : An appraisal of the programme and the performance of key functionaries.* Andhra.

2. Tandon, Sneh Lata. *Organisation and administration of probation services in the Union Territory of Delhi.* Jamia.

Political Science

1. Akhouri, Chanda Rani. *Propaganda and diplomacy : Role of official and non-official instruments in projecting India's Kashmir policy.* JNU.

2. Bhattacharya, Shyamal Kr. *Political participation under the panchayat system in West Bengal : A case study of some gram panchayats in Memari Block of the District of Burdwan.* Burdwan.

3. Choubey, Ganesh Prasad. *Jai Prakash Narayan ke lok satta siddhant ka auchitya evam uski vyavharikta.* HS Gour.

4. Gnanasekar. G.D. *Managerial evolution and work centered motivation : A case study.* Madurai.

5. Goswami, Arati. *Indo-U.S. relations, 1950-1960.* Calcutta.

6. Gulati, Chandrika. *Indo-Bangladesh relations.* Jamia.

7. Mallammal, M. *St. Ramalingam precursor to Mahatma Gandhi.* Madurai.

8. Masih, Sohan N. *Indian Presidency : A critical and comparative analysis.* Devi Ahilya.

9. Nirmala, T. *Organisation and role of women police in Tamil Nadu.* Madurai.

10. Thanvi, Daulat Raj. *Study of district politics in Rajasthan with reference to Nagpur District, 1952-1978.* Rajasthan.

11. Tiwari, Pratima. *Foreign policy of Nepal : A study of the regime of King Birendra.* Rajasthan.

12. Vijapur, Abdulrahim Patelsaheb. *Promotion of human rights and the problem of domestic jurisdiction in the United Nations.* JNU.

13. Vyas, Preeti. *Political attitudes of university teachers: A study in the context of the University of Rajasthan Campus, Jaipur.* Rajasthan.

Economics

1. Gupta, Mohan Lal. *Cooperative financing in Panjab.* Kurukshetra.

2. Haridoss, R. *A study of relative efficiency of sugarcane production in Madurai District, Tamil Nadu.* Madurai.

3. Kameswara Rao, Avasarala. *A study on fertility variations in Andhra Pradesh, 1961-81.* Andhra.

4. Khatri, Narayan Narsingh. *Rural development in Nepal : The role of Small Farmer Development Programme.* Kurukshetra.

5. Kundu, Sakti. *Urban agglomerations and their role in the urban development of West Bengal, India.* NBU.

6. Mohammad Abdur Razzaque. *Role of financial institutions in relation to rural development with special reference to a backward district like Malda since nationalisation of Commercial Banks, 1969.* NBU.

7. Parameswaran Nair, R. *Capital formation in Kerala, 1957-58 to 1977-78.* Calicut.

8. Satya Krupananda Rao, Asepu Veera Venkata. *A study of industrialisation of Andhra Pradesh : District-wise and industry-wise analysis.* Andhra.

9. Shastri, Mukund S. *Baghjal prakalpachya arthik and samajik prabhavachi vishleshanatmak sameeksha.* Nagpur.

Law

1. Bakshi Ram. *Ordinance-making powers of the Governor with special reference to the exercise of powers in Haryana from 1966 to-date.* Kurukshetra.

2. Rawat, Bhagwan Das. *ILO and labour welfare legislation in India : A road to socio-economic justice.* Rajasthan.

3. Razdan, Vinod Krishen. *Supreme Court and social justice in India.* Kurukshetra.

4. Vijay Kumar. *Emerging trends in rural legislation with special reference to legislation relating to agricultural labour.* Kurukshetra.

Education

1. Abdul Samad. *Study of organizational climate of Government high schools of Chandigarh and its effect on job satisfaction of teachers.* Panjab.

2. Benal, Bavasaheb Imamsaheb. *A critical study of development of higher education in the state of Karnatak during six five year plans, 1950-85 with special reference to Karnatak University.* Karnatak.

3. Chauhan, Mohkam Singh. *The relationship between selected anthropometric variables and endurance running performance.* Kurukshetra.

4. Gabriel, Jeyachandran. *Interaction of learning potentials and learning strategies in individualised instructions and its effect on achievement.* Madurai.

5. Kapoor, Madan Lal. *Study of the educational implications of existentialism with particular reference to the philosophy of Jean Paul Sartre.* Jamia.

6. Khadanga, Dayanidhi. *Management of educational systems in Orissa during British rule.* Utkal.

7. Majumdar, Tarunranjan. *Secondary school education in Calcutta : A study on total system.* Calcutta.

8. Naiyar Alam. *An investigation into the pattern of relationship between pupils' space concept maturity and their achievement of geometrical concepts.* Jamia.

9. Narula, Ramesh Kumar. *Analysis of common factors of teacher morale.* Kurukshetra.

10. Sharma, Chandra Kiran. *A study of adjustment, general intelligence and personality of pre-service teachers and their bearing upon class room verbal behaviour.* Rajasthan.

11. Sharma, Hemant Lata. *A comparative study of engineers and civil services personnel belonging to different socio-economic status in relation to their interests and creativity.* Kurukshetra.

12. Sharma, Om Prakash. *A comparative study of the administration of the boards of school education in India.* HP.

13. Sunita. *Motor ability as a factor in home social and emotional adjustment in adolescents, 13+16+.* Kurukshetra.

14. Swain, Sanjaya Ketan. *Construction and standardization of a mechanical aptitude test in Oriya for 10th class students of Orissa.* Kurukshetra.

15. Yadav, Bhup Singh. *Standardization of physical fitness norms of the school children of Haryana, 13 to 16 years of age.* Kurukshetra.

Commerce

1. Balasubbiah, C. *Accounting for inflation.* Madurai.

2. Bisen, Pradeep Kumar. *Economics of paddy cultivation in Madhya Pradesh with special reference to its production variability.* Durgawati.

3. Khan, H. Bharkath Ali. *Export marketing of leather and leather manufactures with particular reference to Tamil Nadu.* Madurai.

Business Management

1. Sharma, Uma. *Working capital management in Air Corporation of India.* Rajasthan.

2. Soral, Girdhar. *Indian shipping : A financial appraisal.* Rajasthan.

3. Yadav, Road Mal. *Jaipur Jile mein farm prabandh.* Rajasthan.

CLASSIFIED ADVERTISEMENTS

The Maharaja Sayajirao University of Baroda

NOTIFICATION No. ADE/2/1987-88

Applications are invited for the following posts in presibed forms, which can be obtained from the University Office on or before **30th September, 1987** by sending a request to the Registrar, M.S. University of Baroda, Vadodara-390 002, alongwith a self addressed envelope of size 30 cms. x 12 cms. accompanied by a Demand Draft drawn in favour of the Registrar, M.S. University of Baroda of Rs. 2/- (Re. 0.50 paise for members of Scheduled Caste and Scheduled Tribe of Gujarat State) or by producing receipt obtained on payment in Cash from Accounts Section of University Office for the same during working days only between 11.30 a.m. and 2.00 p.m. **No amount will be accepted either by M.O. or by Postal Order** except in cases of SC/ST where they can send Postal Order of Re. 00.50 Paise or pay the amount in cash as stated above. The SC/ST applicants will produce a copy of the Certificate to that effect at the time of requesting for form.

Faculty of Technology and Engineering

Professor of : (1) Applied Chemistry (2) Agricultural Engineering (IMTI) (3) Pharmacy (Two) (4) Chemical Engineering (5) Training and Placement (6) Civil Engineering (IMTI) (6—A) Pharmaceutics (6—B) Civil Engineering (Two Posts) (6—C) Computer Science.

Reader in : (7) Mechanical Engineering (Two) (8) Microbiology (Pharmacy Department) (9) Pharmaceutical Technology (10) Analytical Chemistry (Pharmacy Department) (11) Agronomy (IMTI) (12) Applied Mechanics (13) Textile Engineering (14) Applied Mathematics (15) Applied Physics (15—A) Computer Science (Three).

Faculty of Science

Professor of / Reader in : (16) Immunology (17) Molecular Biology (18) Genetics Engineering (19) Bio-physics.

Professor of : (20) Zoology (21) Chemistry (Physical) (22) Biochemistry.

Reader in : (23) Bio-chemistry (Three Posts) (24) Statistics (Three posts)

Factulty of Arts

Professor of : (25) History (Two posts) (26) Archaeology and Ancient History (27) Political Science

Professor of / Reader in : (28) English Language Teaching (Temporary but likely to be made permanent)

Reader in : (29) Anthropology (30) German (31) Political Science

Faculty of Education and Psychology

Reader in : (32) Education (Sociology of Education) (33) Education.

Faculty of Performing Arts

Professor of : (34) Music (Vocal)

Reader in : (35) Sitar (Instrument) (36) Tabla.

Faculty of Law

Reader in : (37) Law

Faculty of Management Studies

Professor of : (38) Marketing (39) Production Management

Faculty of Commerce

Professor of : (40) Business Economics

Reader in : (41) Banking (Temporary) (Upto 31.3.1991) (42) Accounts (Two posts)

Faculty of Social Work

Reader in : (43) Social Work (Two posts)

Oriental Institute

(44) Deputy Director

Faculty of Fine Arts

Reader in : (45) Sculpture (46) In the Department of Art History (Indian Art) (Special reference to Aesthetics) (47) In the Department of Art History (Western Art) (Special reference to Aesthetics)

Faculty of Home Science

Reader in : (47—A) Child Development,

LECTURERS

Sr. No.	Name of the Post	Number of vacancies (Uni/UGC/SAP)	Reservation of Post (SC/ST/SEBC)	Number of attempts made for advertisement for reserved Posts
1	2	3	4	5
	Faculty of Technology and Engineering			
(48)	Lecturer in Textile Engieeering	2 — Uni. Posts	1 — SEBC	Second Time
(49)	Lecturer in Computer Science (for B.E. Computer Science Course)	3 — UGC Post	1 — SC	Second Time
(50)	Lecturer in Computer Science (for Master of Computer Application Course)	3 — UGC Posts	1 — ST	Second Time
(51)	Lecturer in Pharmacology	1 — UNI. Post	1 — SC	Third Time
(52)	Lecturer in Civil Engineering (IMTI)	1 — UNI. Posts	—	—
(53)	Lecturer in Electrical Engineering	4 — UNI. Posts	2 — ST 1 — SC 1 — SEBC	First Time First Time First Time
(54)	Lecturer in Pharmaceutical Analysis	1 — UNI. Post	—	—
(54-A)	Lecturer in Civil Engineering	1 — UNI. Post	—	—
	Faculty of Arts			
(55)	Lecturer in Sindhi	1 — UNI. Post	—	—
(56)	Lecturer in Gujarati	1 — UNI. Post	1 — ST	Second Time
(57)	Lecturer in History	1 — SAP Post	1 — ST	First Time
(58)	Lecturer in Economics	1 — SAP Post	1 — SC	Second Time
	Faculty of Science			
(59)	Lecturer in Botany	4 — UNI. Posts	1 — SC 1 — ST	Second Time Second Time
(60)	Lecturer in Statistics	2 — UNI. Posts	1 — ST	Second Time
)61)	Lecturer in Microbiology	1 — UNI. Posts	—	—
(62)	Lecturer in Biochemistry	2 — UNI. Posts	1 — ST	First Time

1	2	3	4	5
(63)	Lecturer in Chemistry	4 — UNI. Posts	2 — ST 1 — SC	First Time First Time
	Faculty of Fine Arts			
(64)	Lecturer in Painting	1 — UNI. Post	1 — ST	First Time
(65)	Lecturer in Art History	1 — UNI. Post	—	—
(66)	Lecturer in Sanskrit (Art History Deptt.)	1 — SAP Post	—	—
(67)	Lecturer in Applied Arts	1 — UNI. Post	1 — ST	First Time
	Sanskrit Mahavidyalaya			
(68)	Pradhyapakas	3 — UNI. Posts	1 — SC 1 — ST 1 — SEBC	Second Time Second Time Second Time
(69)	Upadhyapaka	1 — UNI. Post	—	—
	Oriental Institute			
(70)	Asstt. Editor	1 — UNI. Post	—	—
(71)	Research Officer	1 — UNI. Post	1 — ST	Second Time
	Faculty of Home Science			
(72)	Lecturer in Foods & Nutrition	1 — UNI. Post	1 — SEBC	First Time
(73)	Lecturer in Arts & Crafts (Home Management Deptt.)	1 — UNI. Post	—	—
(74)	Lecturer in Child Development	3 — UNI. Posts	1 — ST 1 — SEBC	— —
	M.K. Amin Arts & Science College and College of Commerce, Padra			
(75)	Lecturer in Business Management	1 — UNI. Post	—	—
(76)	Lecturer in History	1 — UNI. Post	—	—
	Faculty of Management Studies			
(77)	Lecturer in Management Studies	1 — UNI. Post	—	—
	Faculty of Education & Psychology			
(78)	Lecturer in Psychology	1 — UNI. Post	1 — SC	Second Time
(79)	Lecturer in Education	2 — UNI. Posts	—	—

1	2	3	4	5
	Polytechnic			
(80)	Lecturer in Mechanical Engineering	3 — UNI. Posts	1 — SC 2 — ST	First Time First Time
(81)	Lecturer in Applied Mechanics	1 — UNI. Post	1 — SC	First Time
(82)	Lecturer in Mathematics	1 — UNI. Post	1 — ST	Third Time
(83)	Lecturer in Chemical Engineering : Petrochemicals Deptt.	1 — UNI. Post	1 — ST	First Time
(84)	Senior Instructors Petrochemical Deptt.	2 — UNI. Posts	—	—
	Faculty of Commerce			
(85)	Research Officer	1 (Post (RBI Cell) Temporary	—	—
(86)	Lecturer in Cooperation	1 — UNI. Posts	1 — SEBC	Fourth Time
(87)	Lecturer in Banking	1 — UNI. Post	—	—

Scale of Pay

For Humanities & Sciences & Tech. & Engg.

(1) Professor : Rs. 1500-60-1800-100-2000-125/2-2500

(2) Reader/Deputy Director : Rs. 1200-50-1300-60-1600-Assessment-60-1900

(3) Lecturer/Research Officer Pradhyapak/Assistant Editor. : Rs. 700-40-1100-50-1300-Assessment-50-1600

For Polytechnic

(1) Lecturer : Rs. 2200-75-2800-EB-100-4000

(2) Senior Instructor : (i) Rs. 2000-60-2300-EB-75-3200 (For Degree Holder)

(ii) Rs. 1640-60-2600-EB-75-2900 (For Diploma Holder)

(3) **Sanskrit Mahavidyalaya**
Upadhyapak : Rs. 1400-40-1600-50-2300-EB-60-2600

The application forms duly completed in all respects alongwith prescribed fees in the form of Demand Draft should reach the Registrar, M.S. University of Baroda, Vadodara-390 002 **on or before 15.10.1987.**

(i) Rs. 10.00 (Rs. 2.50 for SC/ST applicants) for posts of Professors/Readers/Deputy Director.

(ii) Rs. 8.00 (Rs. 2.00 for SC/ST applicants) for posts of Lecturers/Pradhyapakas/Upadhyapakas/Research Offieer/Asstt. Editor and Senior Instructors.

Prescribed fee also can be paid in CASH, against receipt in the Accounts Section of the University Office on or before the stipulated date.

NOTE

(1) The candidate must possess the required qualifications at time of last date fixed for receipt of applications by the University.

(2) Canvassing direct or indirect will be a disqualification.

(3) No application will be considered which is received after the last date of receipt of applications.

(4) Application on plain paper will not be considered and no correspondence in that respect will be entertained.

(5) Reservation of post/s is restricted to those who are proclaimed as such by the Government of Gujarat.

(6) Only SC/ST/SEBC candidate need apply for reserved post except for the posts which are advertised THIRD TIME Or more.

(7) So far as the reserved posts are concerned and advertised for the Third Time or more they will be filled up by other suitable and eligible candidates, if no candidate from the concerned reservation is available or found suitable by the Selection Committee.

(8) Candidates if called for interview will have to come at their own expense.

R.V. Kothari
UNIVERSITY REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY

P.O. IIT, POWAI,
BOMBAY-400076

Advertisement No. C-143/87

Applications on plain paper are invited from the citizens of India for the following posts. Persons employed in Government/Semi-Government Organisations or Educational Institutions must apply through proper channel.

Completed applications together with requisite copies of certificates, testimonials and Postal Order for Rs. 3/- for Post No. 1, 2, 3 should be sent to the Registrar on or before **30th September 1987**. No application fee need be sent by the SC/ST candidates.

Outstation candidates called for interview will be paid single second class railway fare from the place of their residence to Bombay and back by the shortest route.

Reservation for SC/ST candidates will be as per Government of India rules.

Scale of Pay : (Scales at Sr. No. 1, 2 & 3 are likely to be revised in near future).

Post No. 1 : Rs. 650-30-740-35-880-EB-40-960.

(Total emoluments on the minimum of the scale : Rs. 1951/- approx.)

Post No. 2 : Rs. 550-25-750-EB-30-900.

(Total emoluments on the minimum of the scale : Rs. 1779/- approx.)

Post No. 3 : Rs. 425-15-500-EB-15-560-20-700.

(Total emoluments on the minimum of the scale : Rs. 1522/- approx.)

Post No. 4 : Rs. 2000/- per month (consolidated).

1. **Assistant Security Officer** (1 post)

Qualifications

S.S.C. or equivalent. Preference will be given to candidates with higher qualifications.

Should have Military/N.C.C./Home Guard Training and also training in Fire fighting work.

Atleast three years experience in a supervisory capacity in the Police or in a big security organisation.

Should be able to ride motor cycle and handle fire arms.

Must be of sound health and active habits.

Should be conversant with security rules and procedure to deal with Police and Public.

Preference will be given to those who have served in the defence forces or with Indian Police Service.

Age : Preferably below 40 years.

Accommodation

Licence fee free accommodation will be provided in the Institute's campus.

2. **Junior Programmer :** (1 post)

Qualifications & Expersence

A degree in Maths/Statistics/Commerce with minimum of second class with a certificate/diploma course in Programming. A minimum of six years experience in supervision of Data Processing activities in an Educational Institution/University of repute concern with students record. A post-graduate degree is desirable.

Age : Preferably below 30 years.

3. **Junior Professional Assistant** (1 post)

Qualifications & Experience

Graduate of a recognised University with a Bachelor's degree in Library Science. Atleast two years's experience of working in an Academic/Research Library.

Job Description

Selected candidate will have to work for shelf organisation, maintenance of books, periodicals, Patents and reports etc. and also to attend other Library duties such as acquisition, technical processing, circulation etc. Preference will be given to candidates with a degree in Science or those having post-graduate qualification.

Selected candidate will be required to attend shift duties on all days upto 11.00 P.M.

Age . Preferably below 30 years.

4. **Junior Architect** (1 post—temporary for a period of 2 years)

Qualifications & Experience

Bachelor' degree in Architecture with atleast two years experience in design and site supervision, preferably in Institutional and Residential Buildings.

Age : Preferably below 30 years.

REGISTRAR

GURU NANAK DEV ENGINEERING COLLEGE

BIDAR-MAILOOR ROAD,
BIDAR—585 403
KARNATAKA

Applications are invited for the positions of Professors/Assistant Professors / Lecturers / Programmers/Teaching Assistants, in the departments of :

Mechanical, Industrial & Production, Electronics & Communication, Civil, Automobile, Architectural Engineering, Computer Science, Applied Chemistry, Physics and Mathematics.

Scales of Pay & Total Emoluments at Minimum of Scale

Professor : 1950-100-2050-125/2-2550-150/2-3000. (Rs. 3397-50).

Assistant Professor : 1600-60-1900-75-2200-100/2-2400. (Rs. 2855-00).

Lecturer/Programmer : 900-40-1020-50-1470-60-1950. (Rs. 1710-00).

Teaching Assistant : 700-40-1100-50-1300. (Rs. 1330-00).

Note : Upward revision of scales is under consideration.

Qualifications and Minimum Experience

Professor : Ph.D. with 5 years or Master's Degree with 7 years or outstanding Engineer with 10 years.

Assistant Professor : Ph.D. with 3 years or Master's Degree with 5 years or outstanding Engineer with 10 years.

Lecturer (Engineering) : Master's Degree of B.E. (First Class with distinction or First Class with 2 years).

Lecturer (Applied Sciences) : Ph.D. Degree.

Programmer : Master's Degree in Computer Science/Computer Applications Business Administration or B.E. Degree in Computer Science (First Class with distinction or First Class with 2 years). Knowledge of developing software applications in higher languages desirable.

The Posts carry D.A. and H.R.A. at College rates. Employees' Contributory Provident Fund and Annual Medical Allowance Facilities are also available. Deserving candidates can be considered for higher start in the scale.

Persons possessing required qualifications and experience in the appropriate discipline may send their applications on plain paper giving complete bio-data and salary expected, addressed to the Principal so as to reach the College within 30 days from the date of publication of this advertisement.

S. Joga Singh
CHAIRMAN

Dr. M.S. Sukhija
PRINCIPAL

MASS COMMUNICATION RESEARCH CENTRE
JAMIA MILLIA ISLAMIA

JAMIA NAGAR, NEW DELHI-110025

Advertisement No. III (UGC INSAT-1B)/1987

The Mass Communication Research Centre invites applications for the following posts for the UGC INSAT-1B TV Project :

I. Research Scientist 'A' (One post)

Scale of Pay : Rs. 700-1600 (pre-revised)

Qualifications

Essential

Master's Degree in Educational/Social Psychology, Education, Sociology, Anthropology, Communication, Extension or related field.

Desirable

(i) Knowledge of experimental design, social science date collection in district towns, and date analysis methods.

(ii) Demonstrated success in working in an inter-disciplinary team with time constraint.

(iii) Self-starter with individual initiative.

(iv) Interpersonal communication skills.

(v) Report writing ability

Experience : Three years.

Mode of Recruitment : Through open advertisement.

II. Editor : (One post)

Scale of Pay : Rs. 1640-2900 (revised)

Educational & other qualifications

Essential

(a) Diploma or certificate in picture and sound editing from a recognized university or institute.

(b) At least 2 years professional experience in a recognized institution engaged in film/TV Production.

OR

(a) Matric or Higher Secondary certificate.

(b) At least 5 years professional experience in picture and sound editing in a recognized organization or institution engaged in film/TV Production or raining.

Desirable

Good knowledge of film and TV media in India and abroad.

Mode of Recruitment : Through open advertisement.

NOTE

1. Any of the qualifications mentioned above can be relaxed at the discretion of the Selection Committee in the case of candidates otherwise exceptionally qualified.
2. The above mentioned posts are meant for the UGC INSAT-1B TV Project Unit and will continue upto March, 1990 in the first instance.
3. Those who have already applied for the post of Editor need not apply again.

D.A., C.C.A., H.R.A., P.F., Gratuity Pension and other benefits will be given as per Jamia Rules.

Application forms can be had from the Administrative Officer, Mass Communication Research Centre, Jamia Millia Islamia, on any day except Saturdays, Sundays and Holidays, either personally between 10.00 a.m. to 12.00 noon or by sending self-addressed and stamped envelope. Application should be accompanied with crossed Indian Postal Order or Bank Draft for Rs. 7/- (Rs. 2/- for SC/ST candidates) in the name of the Administrative Officer, Mass Communication Research Centre, Jamia Millia Islamia, New Delhi-110025.

The last date for receipt of applications is **30.9.1987**.

M.B. Mughal
ADMINISTRATIVE OFFICER

GURU NANAK DEV ENGINEERING COLLEGE

BIDAR-MAILURE ROAD,
BIDAR-585 403

ADMISSION FOR POST-GRADUATE ENGINEERING COURSES—18 MONTHS DURATION

Applications are invited for admission to Post-Graduate Courses leading to a Master's Degree in Civil, Electrical, Industrial Production Engineering and Computer Applications. Interested candidates may apply on plain paper indicating their name, father's name, date of birth, permanent address, address for correspondence, educational record during Bachelor of Engineering Courses, etc.

Minimum qualifications for admission is a Bachelor of Engineering Degree of Gulbarga University or any other University recognised as equivalent thereto, in the appropriate branch in II Class with a minimum of 50% aggregate marks. In case of candidates belonging to SC/ST & BT, the minimum qualifying aggregate is 45%. Candidates who have obtained AMIE/Grade IETE or such diploma whose equivalance is recognised by Gulbarga University, and has teaching/Industrial experience of 5 years are also eligible for admission to the appropriate course.

Applications will be received in this office upto **26.9.1987** .For additional details, candidates may contact the undersigned personally.

S. Joga Sing **Dr. M.S. Sukhija**
CHAIRMAN **PRINCIPAL**

S.N.D.T. WOMEN'S UNIVERSITY

1. Nathibai Thackersey Road
Bombay-400 020

Applications are invited in the prescribed forms available at the University Office, on payment of Rs. 5/- (M.O./Indian Postal Order/in cash) for the post of Reader in Computer Science, to be filled in at Post Graduate Department of Computer Science, Bombay-49, so as to reach the undersigned on or before **fifteen days** from the date of its advertisement.

Required Qualifications & Experience

Good Academic record with a doctor's degree in a field of Computer Science. About 5 years experience of teaching and/or research and development.

Provided further that candidates not possessing Ph.D. may be considered if they have to their credit equivalent research published work or design/development work of a high order either in the institution or in an industry.

OR

In the case of persons to be recruited from industry or professional fields, candidate should possess good academic record in Computer Science with recognised professional work of about 7 years which should include innovation and/or research and development.

Salary Scale : Rs. 1200-50-1300-60-1900+ admissible allowances.

MAULANA AZAD COLLEGE OF TECHNOLOGY

BHOPAL (M.P.)

(A Regional Engineering College)

Advertisement No. Estt./R/
1 September, 1987

Applications in the prescribed forms are invited for the following posts :

(A) **Professor :** (Master of Computer Applications)

Scale of Pay : Rs. 1500-2500

Age : Not below 35 years

Essential Qualifications

An eminent scholar with published work of high quality, actively engaged in Research. Ten years experience of teaching and/or research. Experience of guiding research at Doctoral level.

OR

An outstanding Engineer/Technologists with established reputation who has made significant contribution to knowledge.

Desirable

1. Ph.D. in Applied Mathematics/ Ph.D. in Computer Science
2. Programming LANGUAGES/ Data Base Management and Information System/Data Processing/Numerical Methods/System Analysis and Design.
3. Minimum 10 years of experience in teaching/research of which 5 years should be in field of Computer Science.
4. Minimum 3 years of computing experience in systems programming/data processing/computer hardware and software.
5. Exposure to modern 4th generation time sharing computing systems.

(B) **Assistant Professor :** (Master of Computer Applications)

Scale of Pay : Rs. 1200-1900

Age : Not below 30 years

Essential Qualifications

Good academic record with a Doctor's degree in relevant field. About five years experience of teaching and/or research and development.

Candidates not possessing Ph.D. may be considered if they have to their credit equivalent research published work or design/development work of high order either in the institution or in an industry.

OR

In the case of persons to be recruited from industry or professional fields, candidate should possess good academic record with recognised professional work of about 7 years which should include innovation and/or research and development.

Desirable

1. Degree in M.C.A.
2. Data Base Management System/ Operating System/Assembly Languages/ System Analysis and Design/Computer Graphics/Artificial Intelligence.
3. Experience in Systems Programming/Computer hard and software/Data Processing or in a computer established organisation.

(C) **Lectures :** (Master of Computer Applications)

Scale of Pay : Rs. 700-1600

Age : Not above 35 years

Essential Qualifications

(a) Master's degree in appropriate field in Engineering/Technology.

(b) Constantly good academic record with a Bachelor's degree in Engineering/ Technology. First class at Bachelor's degree and/or Master's degree level.

(c) One year's relevant professional experience outside academic/research institutions.

Relaxed Qualifications

First class fresh degree holders may apply for the post but the person appointed will be required to acquire the M.Tech./M.E. within a period of five years of his appointment failing which he will not be able to earn future increments, until he fulfils this requirement.

Desirable

Degree in M.C.A./Applied Mathematics/High level Languages/Relative Data Bases/Computer System Architec-

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ASSOCIATION OF INDIAN UNIVERSITIES

AIU HOUSE, 16 KOTLA MARG, NEW DELHI-110002

Applications from Indian citizens are invited for the following posts in the prescribed form available on payment of Rs. 2/- from the Office of the Association :

Deputy Secretary : Pay Scale Rs. 3700-5000 (Revised)

Postgraduate with first class or high second class degree with at least ten years experience in an administrative or academic post in University/Government Department/Autonomous Organisation. Knowledge of administrative rules and understanding of issues in university system desirable. Persons with experience of working in Universities/Colleges will be preferred and can be considered for deputation terms.

Senior Cultural Officer : Pay Scale Rs. 3000-4500 (Revised)

Master's degree from a recognised Institution/University. Five years experience with a minimum of two years in youth/organising cultural activities at universities/ colleges/other organisations. Incumbent will be responsible for administration of cultural activities at Inter-University/National/International levels. Deputationists from University/Colleges will be preferred.

The posts carry Dearness and other allowances generally at the Central Government rates. Total emoluments at the initial basic pay of Rs. 3700/- and Rs. 3000 amount to Rs. 5435/- and Rs. 4390 respectively including HRA and Special Allowance Relaxation in any of the requirements may be made in exceptional cases. The Association reserves the right not to fill up the vacancy advertised, if the circumstances so warrant. SC/ST/Ex-servicemen will be given preference. Canvassing in any form by or on behalf of a candidate will be a disqualification.

Applications complete in all respects should reach the Office by **September 30, 1987**. Persons already in service should apply through proper channel. Applications received after the last date or without complete information may not be entertained.

ture/Artificial intelligence/Economics with statistics.

(D) **Programmer :** (Computer)

Scale of Pay : Rs. 1000-1800

Age : Not above 35 years

Qualifications

M.Sc. Maths/B.E. (Electronics/Computer)

Experience

3/4 years experience in Programming Cobol/Fortran/Basic/Pascal on third generation or latest version computer.

Desirable

Membership of professional institution.

(E) **Assistant Programmer :** (Computer)

Scale of Pay : Rs. 900-1550

Age : Not above 35 years

Qualifications

1st/2nd class M.Sc. Maths/B.E. (Electronics/Computer)

Experience

2/3 years experience in programming Cobol/Fortran/Basic/Pascal on third generation or latest version computer.

Desirable

Membership of professional institution.

(F) **Computer Operator :** (Master of Computer Applications)

Scale of Pay : Rs. 740-1250

Age : Not above 35 years.

Qualifications

1. B.Sc. in Mathematics/Physics/Statistics with atleast 50% marks. 3 years experience of Computer Programming/System Analysis.

OR

M.Sc. with 1 year experience. Of this at least 2 years must be in a Computer Centre having 4th generation computer/P.C. laboratory.

2. Should have sound knowledge of high level languages like COBOL, PASCAL, and MSDOS operating system.

Note : Qualifications/Age relaxable in case of well qualified candidates.

General Instructions

1. Candidates serving in the Government / Semi-government / autonomous organisations should apply through proper channel or they should produce 'No Objection Certificate' from the employer at the time of interview, if called. Those who had applied on prescribed application form & through proper channel in response to previous advertisement may send their application on plain paper mentioning further achievements, if any.

2. Higher initial pay may be considered in deserving cases.

3. The benefit of CPF-cum-Gratuity and allowance are admissible according to college rules.

4. Application form can be had from the 'REGISTRAR, MAULANA AZAD COLLEGE OF TECHNOLOGY, BHOPAL-462007' on requisition accompanied by self addressed and Rs. 1.10 paise stamped envelope, 25x10 cm size giving (on the top of the cover also) name of the post and Advertisement Number Estt. (R)/1 **September 87**, dated 1st September 1987.

5. Completed applications should reach the REGISTRAR at the above address on or before **30th September 1987**. Incomplete/late applications and those without registration fee Rs. 7.50 in the form of crossed Indian Postal Order may not be considered.

6. Adequate number of seats are reserved for SC/ST candidates. Other things being equal preference will be given to candidates belonging to SC/ST.

Further details will be made available in the instruction sheet attached with the prescribed application form.

REGISTRAR

ANNAMALAI UNIVERSITY
ANNAMALAINAGAR
RAJAH MUTHIAH MEDICAL COLLEGE HOSPITAL

Notification No. 10/87
Dated : 4-9-87

Applications are invited in the prescribed form from Chartered Accountants for the post of Project Officer to be in charge of the Project Cell constituted to monitor the construction of a teaching hospital to be attached to the Rajah Muthiah Medical College of this University with loan assistance from recognized financing institutions. Appointment to the post shall be on usual contract conditions.

Qualifications

(i) Must possess the qualification as recognised for enrolment in the Register of Members of the Institute of Chartered Accountants of India.

(ii) Must have experience as a Chartered Accountant for not less than 5 years, including 2 years in a responsible capacity in a Commercial/Industrial Organisation or in a Government Department connected with the Administration of the Companies Act, 1956.

(iii) Age

Must not have exceeded 50 years.

Pay : Pay shall be in the range of Rs. 3,000 to 4,000/- p.m. (consolidated); but is negotiable, with due regard to special qualifications, experience and competence.

Those who are in service should route their applications through proper channel.

Application forms can be had from the undersigned, on payment of Rs. 10/- by cash/money order/postal order (not refundable). Filled-in applications (with 5 additional copies) should reach the undersinged on or before **30.9.87**

R. Rajamanickam
REGISTRAR

ANNAMALAI UNIVERSITY

ANNAMALAINAGAR

RAJAH MUTHIAH MEDICAL COLLEGE

NOTIFICATION No. 9/87

Dated : 31.8.1987

Applications are invited in the prescribed form for the following posts in the Rajah Muthiah Medical College of this University :—

Sl. No.	Name of the Post	Number of Post
1.	Professor of Pharmacology	1
2.	Professor of Physiology	1
3.	Professor of Medicine	1
4.	Professor of Surgery	1
5.	Professor of Obstetrics and Gynaecology	2
6.	Professor of T.B. and Chest Diseases	1
7.	Professor of Orthopaedics	1
8.	Professor of Anaesthesiology	1
9.	Professor of Psychiatry	1
10.	Reader in Physiology	1
11.	Reader in Pathology	3
12.	Reader in Microbiology	1
13.	Reader in Forensic Medicine	1
14.	Reader in Radiology	1
15.	Reader in Anaesthesiology	1
16.	Lecturer in Physiology	1
17.	Lecturer in Biochemistry	2
18.	Lecturer in Pharmacology	1
19.	Lecturer in Pathology	2
20.	Lecturer in Microbiology	1
21.	Lecturer in Forensic Medicine	1
22.	Lecturer in Social and Preventive Medicine	2
23.	Lecturer in Rural Health Centre	1
24.	Lecturer in Urban Health Centre	1
25.	Lecturer in Medicine	3
26.	Lecturer in Surgery	1
27.	Lecturer in Obstetrics and Gynaecology	2
28.	Lecturer in Dermatology	1
29.	Lecturer in E.N.T.	1
30.	Lecturer in Ophthalmology	1
31.	Lecturer in Radiology	1
32.	Lecturer in Anaesthesiology	1
33.	Lecturer in Psychiatry	1
34.	Lecturer in Casuality Medical Unit	2
35.	Lecturer in Blood Bank	1
36.	Lecturer-cum-Statistician	1
37.	Antenatal Medical Officer-cum-Lecturer	1
38.	Maternity and Child Welfare Officer-cum-Lecturer	1
39.	Biochemist	1
40.	Chemical Analyst	1
41.	Physicist	1
42.	Tutors	50

Application forms can be had from the undersigned on payment of Rs. 10/- by cash/money order/postal order (not refundable). Filled in applications (with 5 additional copies) **should reach the undersigned on or before the 30th September '87.**

Qualifications

For Sl. No. 1

(i) M.D. (Pharmacology)/M.D. (Pharmacology & Therapeutics)/M.B.B.S. with M.Sc. (Pharmacology)/Ph.D. (Medical Pharmacology)/D.Sc. (Medical Pharmacology).

(ii) Experience as Reader in Pharmacology for 4 years in a recognised Medical College.

For Sl. No. 2

(i) M.D. (Physiology)/M.B.B.S. with M.Sc. (Physiology)/Ph.D. (Medical Physiology)/D.Sc. (Medical Physiology)

(ii) Experience as Reader in Physiology for 4 years in a recognised Medical College.

For Sl. No. 3

(I) M.D. (Medicine)/M.D. (General Medicine).

(ii) Experience as Reader in General Medicine for 4 years in a recognised Medical College.

For Sl. No. 4

(i) M.S. (Surgery)/M.S. (General Surgery).

(ii) Experience as Reader in General Surgery for 4 years in a recognised Medical College.

For Sl. No. 5

(i) M.D. (Obstetrics & Gynaecology) /M.S. (Obstetrics & Gynaecology)/M.D. (Mid. & Gynae.)/M.S. (Mid. & Gynae.)/ M.O.

(ii) Experience as Reader in Obstetrics and Gynaecology for 4 years in a recognised Medical College.

For Sl. No. 6

(i) M.D. (Tuberculosis)/M.D. in Medicine with T.D.D., D.T.D. or D.T.C.D.

(ii) Experience as Reader in Tuberculosis for 4 years in a recognised Medical College.

For Sl. No. 7

(i) M.S. (Orthopaedics), M.Ch. (Orth.)

(ii) Experience as Reader in Orthopaedics for 4 years in a recognised Medical College.

For Sl. No. 8

(i) M.D. (Anaesthesiology)/M.S. (Anaesthesiology)

(ii) Experience as Reader in Anaesthesiology for 4 years in a recognised Medical College.

For Sl. No. 9

(i) M.D. (Psychiatry)/M.D. (Psychological Medicine)/M.D. in Medicine with Diploma in Psychological Medicine.

(ii) Experience as Reader in Psychiatry for 4 years in a recognised Medical College.

For Sl. No. 10

(i) M.D. (Physiology)/M.B.B.S. with M.Sc. (Physiology)/Ph.D. (Medical Physiology)/D.Sc. (Medical Physiology)

(ii) Experience as Lecturer in Physiology for 5 years in a Medical College.

For Sl. No. 11

(i) M.D. (Pathology)/M.D. (Pathology & Bacteriology) / M.D. (Pathology with Bacteriology)/Ph.D. (Pathology)/ D.Sc. (Pathology).

(ii) Experience as Lecturer in Pathology for 5 years in a Medical College.

For Sl. No. 12

(i) M.D. (Bacteriology) M.D.(Microbiology)/M.D. (Bacteriology with Pathology) ; M.D. (Pathology & Bacteriology)/ M.B.B.S. with M.Sc. (Medical Bacteriology)/M.Sc. (Medical Microbiology)/ Ph.D. (Medical Bacteriology)/Ph.D. (Medical Microbiology)/D.Sc. (Medical Bacteriology)/D.Sc. (Microbiology).

(ii) Experience as Lecturer in Microbiology for 5 years in a recognised Medical College.

For Sl. No. 13

(i) M.D. (Forensic Medicine).

(ii) Experience as Lecturer in Forensic Medicine for 5 years in a recognised Medical College.

For Sl. No. 14

(i) M.D./M.S. (Radiology)

(ii) Experience as Lecturer in Radiology for 5 years in a recognised Medical College.

For Sl. No. 15

(i) M. D. (Anaesthesiology)/M. S. (Anaesthesiology)

(ii) Experience a Lecturer in Anaesthesiology for 5 years in a recognised Medical College.

For Sl. No. 16

M.D. (Physiology)/M.B.B.S. with M.Sc. (Physiology)/Ph.D. (Medical Physiology)/D.Sc. (Medical Physiology).

For Sl. No. 17

M.D. (Biochemistry)/M.B.B.S. with M.Sc. (Medical Biochemistry)/Ph.D.

(Medical Biochemistry) D.Sc. (Medical Biochemistry).

For Sl. No. 18

M.D. (Pharmacology) M.D. (Parmacology & Therapeutics) M.B.B.S. with M.Sc. (Pharmacology) Ph.D. (Medical Pharmacology) D.Sc. (Medical Pharmacology).

For Sl. No. 19

M.D. (Pathology) M.D. (Pathology & Bacteriology) M. D. (Pathology with Bacteriology) Ph.D. (Pathology) D.Sc. (Pathology).

For Sl. No. 20

M.D. (Bacteriology) M.D. (Microbiology) M.D. (Bacteriology with Pathology)/M.D. (Pathology & Bacteriology) M.B.B.S. with M.Sc. (Medical Bacteriology) M.Sc. (Medical Microbiology) Ph.D. (Medical Bacteriology) Ph.D. (Medical Microbiology) D.Sc. (Medical Bacteriology) D.Sc. (Medical Mierboicology).

For Sl. No. 21

M.D. (Forensic Medicine).

For Sl. No. 22, 23 & 24

M.D. (Social and Preventive Medicine) (Community Medicine) M.D. Medicine) with D.P.H.

For Sl. No. 25

M.D. (Medicine) M.D. (General Medicine).

For Sl. No. 26

M.S. (Surgery) M.S. (General Surgery)

For Sl. No. 27

M.D. (Obstetrics & Gynaecology) M.S. (Obstetrics & Gynaecology) M.D. (Mid, & Gynae.) M.S. (Mid. & Gynae) M.O.

For Sl. No. 28

M.D. (Dermatology) M.D. (Dermatology & Venereology) M.D. (Medicine) with diploma in Dermatology.

For Sl. No. 29

M.B.B.S. with D.L.O. M.S. (Otorhinolaryngology)

For Sl. No. 30

M.S. (Ophthalmology) M.D. (Ophthalmology).

For Sl. No. 31

M.D· M.S. (Radiology).

For Sl. No. 32

M.D. (Anaesthesiology) M.S. (Anaesthesiology).

For Sl. No. 33

M.D. (Psychiatry) M.D. (Psychological Medicine) M.D. in Medicine with Diploma in Psychological Medicine.

For Sl. No. 34

M.B.B.S. with M.D./M.S.

For Sl. No. 35

M.B.B.S. with D.C.P.

Desirable : Experience in Blood Bank for 2 years.

For Sl. No. 36

M.Sc. (Statistics) with I class with or without Ph.D.

For Sl. No. 37

M.B.B.S. with D.G.O.

Desirable : 2 years' experience in Maternity hospital.

For Sl. No. 38

M.B.B.S. with D.C.H.

Desirable : One year experience in a Neonatal Unit or Children's Hospital

For Sl. No. 39

M.Sc. I Class in Medical Biochemistry/ M.Sc. I Class in Biochemistry with one year experience in a clinicial Biochemistry Laboratory approved by the Government of Tamil Nadu or by the Annamalai University.

For Sl. No. 40

(i) M.Sc. Chemistry in I Class, with or without Ph.D.

(ii) 3 years experience as Analyst of water, food and drugs.

For Sl. No. 41

M.Sc. Physics or Biophysics in I Class, with or without Ph.D.

For Sl. No. 42

M.B.B.S.

Scale of Pay

Professor : Rs. 1500-60-1800-100-2000-125 2-2500 with usual allowances.

Reader : Rs. 1200-50-1300-60-1900, with usual allowances.

Lecturer : Rs. 700-40-1100-50-1600 with usual allowances.

Biochemist, Chemical Analyst, Physicist and Tutor

Rs. 700-40-1100-50-1600 with usual allowances.

(Pending revision in the light of the recommendations of the University Grants Commission).

Higher start will be considered keeping in view long experience, special qualifications etc.

Payment of non-practising allowance is admissible as per University rules.

Candidates invited for interview for the posts of Professors will be paid a single first class to and fro railway fare and for the posts of Readers a single second class to and fro railway fare.

Those who are in service should route their applications through proper channel.

R. Rajamanickam
REGISTRAR

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313350, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055. Tel. 529157

University News

NDAY, SEPTEMBER 21, 1987 Rs. 1.50

Sri Krishnadevaraya University, Anantapur - our hosts to 213th meeting of the Standing Committee. Picture shows the Library and Administrative Block of this upcoming University.

इन्दिरा गाँधी राष्ट्रीय मुक्त विश्वविद्यालय
INDIRA GANDHI NATIONAL OPEN UNIVERSITY

YMCA Cultural Centre, Jai Singh Road New Delhi-110 001

Applications are invited from Indian Citizens for filling up the following posts in the Indira Gandhi National Open University:-

(1) PROFESSORS: Economics, Sociology, Political Science, Management Studies, Public Administration, English and Mathematics.

Scale of Pay: Rs. 1500-60-1800-100-2000-125/2-2500 (to be revised) plus usual allowances as admissible under the University Rules.

Qualifications: An eminent scholar with published work of high quality actively engaged in research. About ten years experience of teaching, research and/or extension. Experience of guiding research at doctoral level.

OR

An outstanding Scholar with established reputation who has made significant contribution to knowledge.

Explanation: F.P.M. (Indian Institutes of Management Doctoral Programme) will be treated as equivalent to a doctoral degree of a University.

(2) READERS: Economics, Political Science, Public Administration, History, English, Hindi, Physics, Philosophy, Computer Science, Management Studies, Library and Information Sciences.

Scale of Pay: Rs. 1200-50-1300-60-1900 (to be revised) plus usual allowances as admissible under the University Rules.

Qualifications:

(a) For disciplines other than Computer Science & Management Studies:

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching, research and/or extension provided that at least three years are as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding record of teaching/research.

(b) Computer Science:

Reader in Computer Science.

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (a) research and (b) innovation in teaching methods, or (c) production of teaching materials. About 5 years experience of teaching and/or research or work experience in computer applications provided that at least 3 years are as a Lecturer or in any equivalent position associated with computer systems.

OR

(i) Master's Degree in Computer Science or Master's Degree in any discipline with a Diploma in Computer Science or a Bachelor of Engineering in Computer Science/Electronics and Tele-Communications.

(ii) Minimum 5 years experience in Computer System Development, Computer Programming and in conducting training programmes in Computer Science/Data Communications, Computer Systems models and performance evaluation/Software Engineering/Artificial Intelligence/Knowledge based Systems/Pattern Recognition/Digital Image Process/Micro Computer Architecture application computer graphics/excellent oral and written communication ability.

(c) Management Studies:

Reader in Management Studies.

Good academic record with a doctoral degree or equivalent published work. Evidence of being engaged in (i) research (ii) innovation in teaching methods or (iii) production of teaching materials. About five years experience of teaching, research and/or extension provided that at least three years are as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding record of teaching/research. Preference will be given to candidates specialising in behavioural sciences or operations management or Marketing management.

Explanation

For determining "good academic record" the following criteria shall be adopted:

(i) A candidate holding Ph.D. degree should possess atleast a second class Master's degree; or

(ii) A candidate without a Ph.D. degree should possess a high second class Master's degree and second class in the Bachelor's degree; or

(iii) A candidate not possessing Ph.D. degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

The following general conditions are applicable to all posts at 1 and 2 above:

(a) Additional Qualifications: Experience and proven ability in imparting education through communication media and innovations in distance teaching methods and materials.

(b) Job requirements: Academic staff of this University will have the following responsibilities:

1. Curriculum and course development
2. Preparation of self instructional print material
3. Preparation of and participation in the production of audio-video materials.
4. Participation in contact programmes, workshops, week-end programmes, summer institutes, face-to-face teaching etc.
5. Undertaking of research, individual, institutional sponsored etc.

In addition to pay, the posts carry all allowances as per UGC norms. Higher start in the prescribed scale may be given in deserving cases on the recommendation of the Selection Committee. In a few cases, the University would be able to provide accommodation.

Provident Fund/Pension, Gratuity, Leave Travel Concession, Medical reimbursement and Leave will be admissible as may be approved by the Board of Management. (It is anticipated that such benefits would be more or less comparable to other Central Universities).

The prescribed application forms can be had from the Registrar, Indira Gandhi National Open University, YMCA Cultural Centre, Jai Singh Road, New Delhi-110001, on a written request by post and accompanied by a self-addressed envelope (size 13 cms x 28 cms) bearing postage stamps of Re. 1.00. Completed application forms along with attested copies of degrees, experience etc. should reach the Registrar at the above address on or before 9th October, 1987. The originals of the above Degrees/certificates should be produced at the time of interview.

Candidates called for interview from outside Delhi will be paid single second class railway fare to and fro by the shortest route from their place of residence/work.

Canvassing in any form by or on behalf of a candidate will be a dis-qualification.

Applications received after the last-date or without complete information will not be entertained.

NOTE 1. It will be open to the University to consider the names of suitable candidates who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases in respect of all the posts on the recommendation of the Selection Committee.

2. The University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.

REGISTRAR

Advertisement No. 2/Admn/87

UNIVERSITY NEWS

OL. XXV SEPTEMBER 21
o. 38 1987
rice Rs. 1.50

Weekly Chronicle of Higher
ducation published by the
ssociation of Indian Universities

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

ditor:
SUTINDER SINGH

7 OCT 1987
C. F. T. R. I., MYSORE

Sri Krishnadevaraya University

M. Abel*

Historical Background

Named after the illustrious patron of letters and learning of the great Vijayanagara empire under whose historic reign came a large part of the Rayalaseema region of Andhra Pradesh, Sri Krishnadevaraya University has come into existence fulfilling a long cherished dream of the people of Rayalaseema. The new University, a natural outgrowth of the erstwhile Sri Venkateswara University Autonomous Postgraduate Centre, Anantapur, has 19 years of academic history. The former Postgraduate Centre was started in 1968 with the Departments of Telugu, English, Mathematics, Physics and Chemistry. Later in 1970 the Departments of Law, Economics and Commerce were added. In 1976 when the Postgraduate Centre became autonomous, the Departments of Rural Development and Bio-Science were started. Thus the former Postgraduate Centre which was started in 1968, had initiated and completed a number of development programmes by 28th July, 1981 when it was upgraded into a unitary, residential University with Prof. M. Abel as its first Vice-Chancellor.

The new University has an extensive campus of 500 acres surrounded by villages, not very far from Anantapur town. The University when it was born in 1981 had an infrastructure of buildings, library, laboratory equipment and playing grounds just adequate to meet the demands of a Postgraduate Centre. But a lot more was needed in order to make the institution a University in the true sense of the term. In order to meet the needs of the fast growing infant University, several additions were made to the existing infrastructure during the Sixth Plan period. 2 Hostels, 1 Science Block, 1 Health Centre, 1 Guest House, 1 Non-Residential Students Centre and 1 Gymnasium were constructed with the assistance extended by the U.G.C. and the State Government to the tune of about Rupees 1 crore.

Academic Departments

When the new University was started in 1981 there were only 10 departments, namely, Telugu, English, Economics, Bio-Sciences and Law. Therefore the immediate task which confronted the new University was first to consolidate the existing courses and then to introduce new courses which are modern and upto-date in their scope and methodology as well as relevant to the problems and aspirations of the people of Rayalaseema.

In response to the increasing demand of the public for higher education and taking into account the needs of the region, the University started in 1981 five new Postgraduate courses, namely, M.Sc. Degree Course in Polymer Science, M.Sc. in Statistics, M.A. in Sociology, M.A. in History and Master of Business Administration. All these courses have been introduced in order not only to enable students to acquire theoretical knowledge of the subject concerned but also to equip them with skills and techniques to apply theoretical knowledge to solve the socio-ecnomic problems of the region within the national perspective.

**Vice-Chancellor, Sri Krishnadevaraya University, Sri Venkateswarapuram, Anantapur—515 003*

The next significant development of the University was witnessed in 1984 when more new Postgraduate courses in Biochemistry, Microbiology, Political Science and Public Administration, Geography and M.L. were started in accordance with the recommendations of the U.G.C. Visiting Team and with the generous financial assistance extended by the U.G.C. We have also introduced the Bachelor Degree Course in Library and Information Sciences. Further, in addition to these Postgraduate and Undergraduate courses, the University has been offering diploma courses in Labour Law, Taxation and Instrumentation and Certificate Course in Library Science.

As a result of these developments the number of departments in the University College has increased from 10 in 1981 to 22.

Faculty

The University has been lucky, to start with, in getting experienced faculty members who had put in several years of service in the Sri Venkateswara University. When the University came into existence in 1981 there were only 86 faculty members. The strength of the faculty has now increased to 160 on account of strengthening the staff of the existing departmens and the opening of new Postgraduate courses. The teacher-student ratio works out to a desirable 1 : 8. The members of the faculty are well qualified and competent, some of whom enjoy national as well as international recognition as scholars in their respective fields. Each department has produced a good number of M.Phil. and Ph.D. degree scholars in addition to the productive research work of individual faculty members. Several departments have executed and are currently engaged in research projects—as many as twenty—provided by CSIR, UGC, ICSSR and the Ministry of Science and Techlogy. The total value of the grants received for these projects is in the range of Rupees 10 lakhs.

Research

The number of research scholars registered for M.Phil. and Ph.D. Degrees has been increasing. Their number which was 69 for M.Phil. and 15 for Ph.D. in 1981 has increased to 84 for M.Phll. and 33 for Ph.D. During the period under review i.e., from 1981 to 1984, 20 research scholars have qualified themselves for the award of the Ph.D. Degree and 57 for the award of the M.Phil. Degree

The Library is the heart of any academic institution. As such we have been giving special attention to the building up of our Library. With the assistance of the State Government as well as grants received from U.G.C., we have been able to add very significantly to the number of volumes in our library. With 60,000 books and 6,000 back numbers and a large number of current journals, the Library is serving the academic community in a very satisfactory manner.

The enrolment of students in various Postgraduate degree courses also has been steadily increasing. When the University came into existence in 1981, the total number of Postgraduate students was 1129 which has now increased to 1300.

Extension & Co-Curricular Activities

Extension work has always been regarded as a valuable component of academic activity in the Sri Krishnadevaraya University. As early as in 1971 the social concern and commitment of the faculty here were reflected in the starting of night schools for functional literacy in the neighbouring villages. Since then even when institutional support was not adequately forthcoming, several programmes for the development of the village community were planned and executed. The departments have each proposed a specialised type of extension work suited to their discipline. The National Service Scheme Unit in the University has been very active and has executed several laudable projects in and around the campus and in the neighbouring locality as well as in far away places. It should be mentioned to the credit of our NSS Unit that the work they did during natural calamities such as cyclones in such places as Diviseema, Janagam, Jakkalavari Kandriga in Nellore district were highly appreciated by the beneficiaries as well as the general public. With this experience in extension education, we are now planning to launch into the area of adult education in a big way by opening 60 adult education centres with the assistance given by the U.G.C. We hope that these extension programmes of the University will forge links between our academic community and the neighbourhood community which will help our students to cultivate social awareness and also develop a sense of social responsibility.

Our students have participated in a number of inter-university and inter-state tournaments. Being a small residential University, it is very difficult to involve our students in any significant manner in such inter-university and inter-state tournaments. In spite of such limitations our University teams have been given opportunities to play in tournaments conducted at different levels especially in games, such as Volleyball, Badminton and Cricket. We also conducted the All India Ball Badminton Tournament on our Campus at the beginning of this year which was appreciated by all the participating teams.

The University also maintains a Health Centre which takes care of common ailments of our students and members of staff. As we are far from the town the need for adequate medical and para-medical staff is acutely felt especially for emergencies in the nights. So we have established a Health Centre with the generous assistance of the U.G.C. and the Government of Andhra Pradesh.

Prospects for the Future

This encouraging profile of the University does not mean that it has no "promises to keep". In fact, it has to go miles and miles before it can meet the rising expectations of the people of the backward region of Rayalaseema. Further, in order to be at par with other older universities in the State and in order to forge a unique identity of its own, tremendous effort is needed in terms of academic planning, fund raising and introduction of new courses. In order to fulfil the high expectations of the people, the new University has first of all to give a central place to studies and research relating to rural and agrarian problems of Rayalaseema in its academic programmes. This need is underlined by the fact that the University is situated in a rural area. We do not live in ivory towers here and we are only too conscious of the fact that we are enduring severe drought conditions for the third year in succession. Everyone refers to an integrated approach to the problems of the region. But few seem to practise integral approach involving holistic understanding of the region in its entirety. Geologists, Economists, Natural Scientists, Physicists, Sociologists, Political Scientists, Managers and Administrators have to work together in the common pursuit of true understanding. Hence the University has established a Rayalaseema Institute for Regional Planning and Development which will offer post M.A. and M.Sc. courses, M. Phil. and Ph.D. programmes on an interdisciplinary basis. The Institute can serve the functions of a "Grassroots academy" keeping constant touch with the facts that constitute the raw material for a variety of research activities. What is sought by the University in starting this Institute is to offer an institutional framework within which all disciplines can collaboratively work to tackle regional as well as national problems. But if the Institute is to function effectively we need to fill certain gaps in our social sciences as well as physical and natural science departments. So there is need to start Departments of Geology, Geophysics, Psychology, Social Work and Home Science. These together with the already existing departments will go a long way in fostering and promoting interdisciplinary study and research of problems at the regional as well as national level.

The All India Board of Management Studies has given recognition to our M.B.A. Course as recommended by the Team of Experts sent to the University to evaluate this programme. This recognition has come as a great boon to the University. Accepting the recommendations of the All India Board of Management Studies, the U.G.C. has sanctioned liberal assistance to strengthen the M.B.A. Programme in terms of staff, library and equipment, and buildings. This will go a long way in facilitating the University to establish an Autonomous Institute for Management and Development Studies.

Affiliation

The University which is at present a residential Institution is soon acquiring a federal character. The Government of Andhra Pradesh has decided, with the concurrence of the University Grants Commission, to make Sri Krishnadevaraya University an affiliating University. The University Act has been suitably amended empowering the University to affiliate all colleges located in the two districts of Anantapur and Kurnool. About sixty colleges in these two districts will soon be under the jurisdiction of our University. This is going to cast a heavy burden on the University. However, the University is willing to accept this responsibility in the hope of serving the academic interests of the students of these two districts more effectively. We also welcome this as a right step in the direction of the creation of more autonomous colleges and the diversified growth of educational interests in these two backward districts. While agreeing to accept this additional burden, it must be mentioned that the University, in order to be able to discharge its duties and responsibilities as an affiliating University, needs adequate administrative and non-teaching staff. It is hoped that the Government of Andhra Pradesh will recognise this need and sanction adequate financial assistance to establish an effective administrative structure with competent personnel to take care of the educational interests and promote the development of the affiliated colleges.

Conclusion

This is a critical period in the history of Sri Krishnadevaraya University as it stands on the threshold of the Twenty-First Century with all the scientific and technological challenges and opportunities it offers. The University has to respond positively and creatively to the call of the new century and acquire necessary resilience and vitality to adapt and adjust itself to the ever-changing scientific and technological environment of the age by retaining a firm commitment to the rich cultural and spiritual heritage of India. As an infant University, Sri Krishnadevaraya University possesses vast potential for growth, but it needs the cooperation, support and goodwill of the Government and the people of this region to actualize its potentialities. □

Where Have all the Values Gone ?

Nikhil Chakravartty

September 5 each year is observed as Teachers' Day. It is so observed because it is the birthday of Sarvepalli Radhakrishnan, the teacher who was honoured as the second President of the Rupublic of India. Those who have had the good fortune of being counted as Radhakrishnan pupils will always feel proud that he was the Professor-President of the land of ancient seers and modern avants and that humble teachers from different corners of the country are honoured every year on his birthday.

This year September 5 has come and gone leaving behind the disturbing memory of an ugly episode. For more than a month before that day, a massive strike of 230 thousand college and university teachers had gone on, demanding improvement in their terms of service as set by the Government. And actually the day before a settlement was arrived at in the form of an agreement signed by the Chairman of the University Grants Commission and the Secretary of the Union Education Department on the one hand, and the representatives of the All-India Federation of University and College Teachers Organisation, including its President and General Secretary.

These representatives of the teachers' federation found the settlement acceptable, though obviously as a compromise it could not possibly meet all the demands of the striking teachers.

What is noteworthy is that this settlement of the strike has met with the approval of the bulk of the college and university teachers all over the country. The majority viewpoint among the striking teachers was that what could not be realised immediately could be the subject of further negotiations to be taken up at a future date. Just at the present moment they felt that the settlement as envisaged in the federation agreement with the government warranted them to withdraw the strike, which had for more than a month disrupted the study of lakhs of college and university students all over the country.

But there was angry opposition to the agreement by another section of teachers who, as later developments have made it amply clear, form a minority in the university and college teacher community taking the country as a whole. Particularly vocal in their opposition to the agreement have been the teachers from the universities in Delhi. In fact, they have spearheaded the attack on the agreement. There is an understandable — but not necessarily rational — explanation for this angry outburst against the agreement from the aggressive section of teachers. They had already extracted concessions from the government through a protracted strike two years ago and so they had the misgiving that the present settlement might cut into their gains.

There was thus scope for differences within the federation, and the normal and proper channel for settling such differences is obviously the Executive Body of the Federation. Although the President and office-bearers of the Federation had been authorised before hand to negotiate and settle the dispute with the Government, one can of course demand that the terms of the settlement must be taken up for reappraisal within the Federation, particularly in its national executive.

In fact, two days after the signing of the agreement on September 4, the national executive of the Federation met and after heated arguments and angry discussions, endorsed the agreement by a substantial margin of 57 to 35 ; in fact the margin was actually 65 to 35, since eight of the office-bearers, the target of minority attack, refrained from voting.

What is intriguing is the extraordinary anomaly

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of the stand of the CPM leadership and the teachers belonging to that party. While the CPM leadership of the Delhi University teacher's union has denounced the agreement and has insisted on continuing the strike, the West Bengal University and College Teachers' Association, has welcomed the agreement. There is therefore ample scope for genuine differences of opinion among the teachers in their assessment of the agreement. Obviously, the legitimate course for sorting out such differences is to thrash these out through discussions within the teachers' organisation and not in a rowdy manner on the maidan.

But that was precisely what happened on the morrow of the agreement. At a gathering of members of the Federation near New Delhi's Jantar Mantar, the aggressive local teachers not only surrounded the President and the General Secretary of the Federation but physically assaulted them in public tearing off their clothes and smearing them with dirt, and it was the police which arrived to rescue them. A shocking sight of insensate intolerance which had the character of an underworld brawl.

It is intensely disconcerting that a community of teachers should indulge in such an attack and humiliate their fellow-teachers in such an intolerable situation. **Those who are supposed to have been entrusted with educating our youth and uplifting their character to become worthy citizens of this great country, were indulging in violence against their own colleagues. Isn't this a case of total abdication of moral responsibility ?**

Let us look at this shocking experience from another angle. Take the Federation President who was beaten up by his colleagues. He is known to be a distinguished teacher. How will he be able to exhort his pupils to practise discipline and preserve integrity? And the teachers who have participated in such goondaism, how can they go back and claim the respect and attention of their pupils ?

It is this exhibition of moral degeneration of a section of the only teachers who are supposed to be custodians of our civilizational heritage that has become a matter of grave concern for all right thinking citizens of this country. It provides the measure of our abdication of cherished values. It is time eminent academics instead of withdrawing into their shells came forward to enforce civilized norms of conduct on the part of their colleagues.

For me, the beating up of teachers by their colleagues on his birthday was like beating up the memory of Radhakrishnan himself. Not anger but anguish disturbs many of us at this misconduct of those who are supposed to carry the lamp of learning in this land. Must not our teachers pause and count the beat of their conscience within them ? Let them realise that they are supposed to teach their pupils that rowdyism is not revolution, and that we do not want to import into this country the vulgarity of the so-called "cultural revolution", which has been repudiated in the very land where it surfaced. □

[**Courtesy** : The Times of India]

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Students and Mass Education

D. K. Gogoi* and N. Bordoloi*

For the last two decades, there has been an "explosion of concepts" in the field of education, resulting in a number of approaches, types and forms of education, viz. adult education, life long education, correspondence education (distance teaching), non-formal education, extension education, mass education, etc. This has widened the scope of education beyond the formal system and the benefits have been extended to the people irrespective of their physio-socio-economic conditions and/or geographical locations.

The concept of "mass education" has atleast two connotations. One points to the education of non-elite mass i.e. education of the people who are under privileged, poor and illiterate. The other connotation is the target level of educational efforts viz. individual, group and mass level of education. The latter aimed at reaching a larger section of the society at a particular point in time. The second connotation is parallel to the concept of mass communication. The significance of mass education is, however, embedded in both the connotations of the term. The education for the masses is relevant and important to achieve our goal of rural development and also to meet a situational need arising out of mass illiteracy, ignorance poverty and inequality among the rural people. This justifies the approach of education in mass level to accelerate the process of rural development. In fact, education has been recognized as one of the inputs to bring about socio-economic change in society.

India is a vast country with a population of 684 million out of which 70 per cent live in rural areas. About 294 million of the total population are living below the poverty line (1977-78) and 446 million (1981) are illiterate[1]. In such a situation all potential resources should be used to educate the masses, particularly the rural mass. Shah (1982) observed that "the problem of illiteracy in India and other developing countries requires an imaginative approach involving a large-scale utilization of mass media (other resource channels should also be used) for giving what is called 'fundamental education' to vast illiterate masses possibly without waiting to impart literacy".[2] The students community, if properly mobilized can serve as effective channel to reach the masses with the "fundamental knowledge" for their own development and to play an effective role in national development.

'The students of today are the citizens of tomorrow'. As future citizens, they must have the real picture of the society in which they live and must understand the problems of the fellow citizens. In order to realize the gravity of the situation and to develop a positive feeling for the masses, no statistics or statistical table can help, unless the students see by themselves, directly talk with the downtrodden, interact with illiterates and sit with the poor.

The present system of formal education is mostly catering to the need of the elite group of people. Possibly, the formal educational system had helped directly or indirectly, the process of division of population into the elite and the mass. Reddy (1980) observed two important consequences of educational systems created by the elitistic society. First, the gap between the elite and mass has increased and the dominance of the elite over the mass was institutionalized. Secondly, the relevance of formal system of education which is designed by the elite for the purpose of elite society, becomes ineffective for the rural society[3]. Even at the micro-level of society i.e. within a family, barrier, develops between the literate/educated and illiterate members.

The students may be involved in educating their family members, their neighbours, their villagers, and the potential learners around their educational institutions. The students should be taken to the villages and slums in the cities to educate themselves and to educate the masses.

Involving Students

While involving the students in mass education, care must be taken to mobilize them properly, without loss of their academic interest. The nature and extent of involvement should be such that it supplements their efforts to learn more on the subject matter, which is taught.

(a) Direct and Indirect Involvement

The direct involvement includes the out-campus activities of mass education. The students go to the villages or slums in the cities and directly contact the potential learners so carry out their educational projects/activities.

**Department of Extension Education, Faculty of Agriculture*, Assam Agricultural University, Jorhat-13.

The indirect involvement encompasses the in-campus activities related to mass education. The students may organize competitions in mass production of visual aids for illiterates; write essays, poems, articles, short stories for literates and neoliterates. They may also organize group discussions, conferences, seminars among themselves, on topics related to mass education. The indirect involvement may also include inter-campus educational activities, that is to say, exchange of knowledge between two groups of students from different campuses or institutions.

The students should be involved both directly and indirectly in mass education. The direct and indirect involvement may be viewed as exploring their maximum inherent potentialities which in course of time will pragmatically mould their personalities.

(b) Voluntary Vs Involuntary Participation

The participation of students in mass education may be voluntary or involuntary. In other words the participation may be optional or compulsory.

In order to ensure effective participation of all sections of the students, some amount of compulsion may be necessary.

(c) Academic or Non-academic Activities

If the subject matter/content of mass education can be selected properly and can be linked with the course curriculum, student participation in mass education may be a part of their academic activities.

The students may also be involved in mass education through their extra-curricular activities like NCC, NSS, etc. The NSS cadets usually organize camps to provide labour service in construction or repairing of roads, buildings, etc. These camps can easily be converted and/or extended to training camps for the villagers or any specific target group.

(d) Periodic or Continuous Involvement

By 'periodic involvement' is meant to involve the students when the need arises. For example, during war-time, floods and droughts, famines, or any other national crisis.

The 'continuous involvement' means systematic involvement of students with well designed programmes to educate masses at different stages of their (students') training. The continuous involvement of students in mass education may require a well conceived national policy and a well designed programme with all the needed facilities and funds.

Area to be Covered

'Area' here implies : (a) Geographical area, and (b) Subject matter area.

If it is decided to involve students in mass education, a geographical area like a neighbourhood, a village or a cluster of villages, a development block, a subdivision/district may be allotted which may be called the 'service area' of an institution. The service area should be allotted on the basis of level of education, population of students and other facilities available in the institution.

The subject matter or content of mass education must be identified and selected properly to involve the students in the programme. A list of contents may be prepared based on the needs of the situation (local and national level) and organized in a hierarchy to involve the students from lower to higher levels of their education. A part of the subject matter may be kept as "general" which may be covered by all the students irrespective of their academic background. The other parts may be kept for students of specialized branches like agriculture, engineering, medical, etc.

Conclusion

Although, there is much scope of involving students in mass education, yet a number of problems like time constraint, motivation of students and the target group, operational difficulties, etc. can also be foreseen. These can be overcome through a systematic and well organized programme of involving students in mass education. The number and type of problems may also vary according to the nature and extent of students' involvement in mass education.

To begin with, a pilot scheme in the line of NSS, may be designed to involve the students in the mass education programme to find out the problems and operational difficulties. The scheme may be implemented on a limited basis. At the initial stage, the participation of students should be voluntary and non-academic nature. □

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The Teaching of Wildlife Science

H. S. Panwar and W.A. Rodgers*

In February 1986 the Wildlife Institute of India and Aligarh Muslim University cosponsored a symposium on the "Role of Universities in Wildlife Education and Research." The Symposium, which received UGC funding, was attended by delegates from Universities, Central and State Government Wildlife Organisations Research Centres plus a visiting team of wildlife professors and managers from the U.S.A. Theme papers on planning and teaching wildlife science curricula, the need for a trained cadre of wildlife scientists and an overview of research priorities in wildlife preceded considerable discussion. Delegates passed a set of resolutions which have since been forwarded to Government Wildlife Organisations and to the University Grants Commission.

These resolutions will be valuable to all universities with an interest in developing courses in aspects of wildlife science, and so they are summarised here, with explanatory justification where necessary.

(1) The universities have a vital role to play in the establishment of Wildlife Science as a multidisciplinary, field-oriented and applied subject, representing wildlife biology and management as they relate to the Indian context.

> It is time to recognise and encourage the emergence in India of a distinct discipline of Wildlife Science, which draws elements *inter alia* from subjects such as zoology, botany, forestry, natural resource management, veterinary science, rural development and human ecology. The universities should foster the growth of this applied subject by (a) teaching it at appropriate levels, (b) providing a strong scientific foundation through active involvement in field research, and (c) testing and developing the methodology by which scientific knowledge is applied in the management of wild animal and plant resources.

(2) In order to promote Wildlife Science within the university system, it is recommended that the University Grants Commission create a panel on Natural Resources Management, allocate funding for the establishment of a small number of university wildlife centres and endorse appropriate wildlife M.Sc. programmes so as to facilitate their recognition by Public Service Commissions as postgraduate qualifications in science.

(3) University teaching of wildlife, which must have clearly defined objectives, should mainly be at the postgraduate level and, whilst broadly following common curricula, should allow local variations in teaching pattern and emphasis of subject matter.

> Objectives in teaching wildlife science should include (a) the creation of interest in the subject, (b) drawing attention to the problems of wildlife and natural resource conservation and its importance to human welfare, and (c) the preparation of students for careers in the wildlife field—research, education, management, etc.
>
> Undergraduate courses should be confined to general instruction on conservation of natural resources, both arts and science students, and a paper or part paper on wildlife and natural resources at B.Sc. final year level in zoology, botany or life sciences. At postgraduate level where wildlife teaching should be mainly concentrated, three broad patterns are possible, viz., (a) a paper or part paper on wildlife within a general M.Sc in zoology, botany, life sciences, forestry, environmental sciences, etc., (b) a one-year specialisation in wildlife within an M.Sc in one of these fields, and (c) a full 2-year M.Sc. degree in wildlife science.
>
> Appendices to these resolutions contain suggested outlines for syllabi at various levels. It is recommended that in order to ensure uniformity, universities adopt the broad multidisciplinary pattern indicated for wildlife teaching. However, local variations in teaching pattern and course arrangement are to be expected. Similarly, local emphasis of subject matter, reflecting regional diversity in wildlife distribution and management approaches, will enhance the overall growth of the discipline of wildlife Science in the country.

(4) In order that wildlife faculty and postgraduate students are actively involved in field research, concerned departments of the Union and State Governments should provide funds and collaborate in the selection and execution of projects, ensuring their relevance to conservation problems and the need for scientific data as a basis for management.

**Wildlife Institute of India,*
New Forest, Dehra Dun-248 006.

(5) There is an urgent need for staff development programmes in wildlife science including short training courses, the encouragement of interaction between university faculty and experienced wildlife managers and promotion of the exchange of information on wildlife teaching and research findings.

(6) The Indian Board for Wildlife should be approached to endorse cooperative activities between the universities and state wildlife organisations, while the Wildlife Institute of India should act as a nodal agency in the arrangement of workshops and training tours and the co ordination of wildlife research on a national basis .

In retrospect three major conclusions developed from this symposium. The first was that there is a need for greatly increased teaching inputs in the field of environmental conservation including wildlife resources at all levels of University Education. Every science student should be aware of present day environmental problems.

The second conclusion was that wildlife teaching can be offered in many ways, from a part or single paper at B.Sc. level, to a full year or two year specialisation at M.Sc. level. All such alternatives have their values, but only a few institutions should offer the full one or two-year M.Sc. courses. Wildlife science is an extremely broad field and the student needs a good grounding in basic biological sciences before taking the more applied aspects of the curriculum. This will usually mean the student taking general biology courses in the first part of an M.Sc. programme.

The third conclusion was that wildlife science cannot be taught solely in the classroom. The University must be able to offer adequate field course teaching facilities. Effective teaching needs textbooks and journals, field and laboratory equipment and study material. Institutions contemplating Wildlife teaching will need considerable preparation time.

Some of these issues were elaborated in the theme papers presented at the Symposium, copies of which can be obtained by writing to the Director, Wildlife Institute of India, P.O. New Forest, Dehra Dun-248 006, or to Chairman, Centre for Wildlife and Ornithology, Aligarh Muslim University, Victoria Gate Block, Aligarh—202 001.

Since the symposium, two important developments have taken place. Aligarh Muslim University have created a Centre of Wildlife and Ornithology which teaches at the B.Sc. level and a full M Sc. in Wildlife Science. The Wildlife Institute of India will be offering a two-year M.Sc. programme in Wildlife Biology in cooperation with a University. The Institute is planning a field workshop in the teaching of wildlife ecology for University staff, probably in December 1987.

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Application in the prescribed form together with copies of certificates should reach the undersigned on or before **1st November 1987**. Candidates who are already employed shall send their applications thorugh proper channel. Pay scales and other service conditions for the post I, II, III will be as per Bombay University rules. Other things being equal, preference will be given to backward class candidates. Educational qualifications can be relaxed, at the diseretion of the Management, in case of candidates having adequate experience of working in an industry.

Prescribed forms of application can be obtained from the office on payment of Rs. 10/- or Postal order per form.

Dr. S.D. Kopardeker
DIRECTOR

National Conference on Role of Universities in Implementation of New Education Policy

The Association of Indian Universities will organise, in collaboration with Osmania University, a National Conference on Role of Universities in Implementation of New Education Policy on December 18 & 19, 1987 at Hyderabad.

The **New Education Policy (NEP)** visualises the role of higher education as providing people with an opportunity to reflect on the critical social, economic cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills.

The role of universities is crucial in the matter since one of the important functions of universities and institutes of higher learning is to provide specialized scientific and technical skills, imparting of knowledge, contributing to every sector of national development and improving social conduct and behaviour. Thus, a major share of responsibilities, as envisaged in the NEP, rests with the universities and other educational institutions. It becomes imperative for the educational community to try to define some of the important issues involved in the management of higher education, the efficiency improvement, the financing of higher education, youth services and physical fitness programmes, education in human values, etc. in the light of the NEP recommendations.

The deliberations of the conference will focus on the following topics :

I. **Management of Higher Education**

* Consolidation and Expansion of Institutions
* Autonomous Colleges and Departments
* National Apex Body and State Councils of Higher Education

II. **Improvement in Efficiency**

* Teachers Training
* Restructuring of Courses
* Research and Extension
* Evaluation and Examinations

III. **New Strategies in Higher Education**

* Evaluation and Accreditation of Institutions
* Youth Services, Sports and Physical Fitness Programmes
* Distance Teaching/Learning
* National Testing Service
* Rural Universities
* Education in Human Values

PROGRAMME

December 18, 1987 (Friday)

10.00 A.M.	INAUGURATION
11.30 to 1.00	SESSION I
2.00 to 4.30	SESSION II

December 19, 1987 (Saturday)

9.00 to 11.30 A.M.	SESSION III
12.00 to 1.30	SESSION IV
2.30 to 4.30	SESSION V (Plenary)

Participation

The participation to the conference can be either in the form of presentation of a paper or through discussion. The participation to the conference is open to individuals belonging to universities, research institutions, Govt. and non-Govt. organisations involved in planning and development of higher education.

Registration Fee

Each delegate is required to pay a non-refundable registration fee of Rs. 400 through a bank draft in favour of the Secretary, Association of Indian Universities, New Delhi. The fee includes accommodation, conference papers and meals during the conference dates, December 18 & 19, 1987.

Last date for receipt of registration fee alongwith registration form (to be filled in duplicate) is **October 15, 1987.**

Venue

The venue of the conference is Osmania University, Hyderabad, A.P.

Language

The official language of the conference will be English.

Receipt of Papers

The papers (Typewritten and in duplicate) should reach the Convenor not later than **October 15, 1987.**

Convenor

Dr. V. Natarajan
Project Director (Exams.)
Association of Indian Universities
AIU House, 16 Kotla Marg
New Delhi 110 002.
Telephone : 3310059
Telex : 31-5578 AIU IN
Telegram : 'ASINDU'

Jan Shikshan Nilayam

The National Literacy Mission has proposed the establishment of a Jan Shikshan Nilayam for every 5000 population. The purpose of the Nilayam is to provide an opportunity for continuing education for neo-literates, who have finished a basic literacy programme at an Adult Education Centre or through the Each One, Teach One Programme, to maintain and enhance their literacy level.

Though the concept of the Nilayam has been accepted in principle by the Parliament and thus by the University Grants Commission, the procedures for its establishment are yet to be worked out. Therefore the opening of a Jan Shikshan Nilayam at D.G. Ruparel College, a leading college of the University of Bombay, is a bold step forward since it has not waited for bureaucracy and for **grants** A sewing-machine, a T.V. set and books have been put-together for the Nilayam with the support of Mr. A. Dahanukar of the Rotary Club of Bombay.

The opening of the Nilayam is a sequel to the National Seminar for Undergraduate Curriculum for Community Colleges at Gujarat Vidyapith in July, 1987.

Dr. R.H. Narang, Director, Department of Adult and Continuing Education and Extension, University of Bombay said that it was frustrating to watch neo-literates lapse into illiteracy because of the absence of a Follow-up Post-literacy Centre. Hence the establishment of a Nilayam was imperative. The establishment of a Jan Shikshan Nilayam is only a step towards finally establishing community colleges and schools.

The Jan Shikshan Nilayam was inaugurated by Prof. Ramlalbhai Parikh, Vice-Chancellor, Gujarat Vidyapeeth. In his inaugural address he observed, 'Today Shikshan has marched ahead of Shaasan in Bombay University as it has not waited for formal approvals and consequently grants.' It is a dream come true as now education will reach out to the community and become relevant and meaningful. At the Nilayam anyone can be a teacher or a learner. If our 35 lakh students were to teach and guide even 5 persons each through the Nilayam, the country would be free of the stigma of illiteracy within the next ten years, he said. 'Bombay University has shown that only a WILL is required to march ahead as at the Nilayam, students will teach, with the country's progress as their only remuneration. The Bombay University has taken the lead in establishing a model for non-formal education and setting a pace for others to follow', he added.

Prof. Abhyankar, Pro-Vice Chancellor, Bombay University commended Prof. Pradhan, Principal, D.G. Ruparel College and Prof. Shinde of Non-Formal Education for their commitment not only to excellence in formal education but also in achieving adult literacy. He hoped that other colleges, particularly those in the rural areas, would follow the pace set by this college.

The inauguration was attended by student instructors, women learners from nearby joppad-pattis and mill area and by the College staff.

Recognition for Cochin Varsity

The Physics Department of the Cochin University of Science and Technology has been identified by the University Grants Commission (UGC) for research in the high priority area of superconductivity. This is in recognition of the expertise and equipment facilities of the Department. During the past 5 years the Physics Department of the University has undertaken research work in areas that are directly related to superconductivity and rare earth compounds.

As an initial step the UGC has granted an assistance of over Rs. 4 lakhs to promote research and development in the area of high temperature superconductors.

Developments in superconductivity have attracted attention of scientists all over the world because of their immense potential for use in fields like electrical machinery, surface transport, energy storage devices, solar energy utilisation, computers and much more. This opens up entirely new vistas of research, engineering and applications. It may be recalled that an Apex Body has been recently set up under the chairmanship of the Prime Minister to promote superconductivity related to research and applications on a high priority basis.

Surgery Up-date '87

Hon'ble Mr. H. L. Kapur, Lt. Governor of Delhi, inaugurated a seven-day workshop on "Surgery Up-date '87 as part of continuing medical programme", in New Delhi organised by Maulana Azad Medical College and the associated G.B. Pant and J.P. Hospitals. He said formal education provided only a base, and such workshops and seminars on continuing medical education enabled doctors and scientists to keep abreast with advancements made in medical profession.

Mr. Kapoor said that to review and put all advancements of scientific knowledge and progress in the field of surgery to practical application, such programmes were of great importance as they provided a forum to discuss the latest technique in surgery and allied matters.

Stressing the importance of continuing medical education, Mr. Kapoor said, "Education, and life are inseparable and coterminus. There cannot be education which is lifeless. Education begins with birth and continues as long as one lives".

The Lt. Governor declared that students of Maulana Azad Medical College will be provided with close circuit TV facility to enable them to see for themselves the operations being performed by experts in its associated G.B. Pant and J.P. Hospitals.

Summer School on Plasma Physics

The Department of Physics of the Ravishankar University organised an All India Summer School on Plasma Physics for the benefit of students and the research scholars. During the course of the 3-week School, special lectures were delivered by the faculty drawn from the universities of Delhi, Jadavpur, Kalyani, Rajasthan. Ravishankar and IIT, Delhi. The subjects covered included Energy Crisis, Tokomak, Chaos, Artificial Intelligence, Quasars, Kinetic Theory and Electron-Neutral Collision Processes. Films on astrophysical objects, solar system, galaxies, universe and cosmology were also exhibited during the School.

19 research fellows and 18 students from different universities and colleges attended the Summer School.

Incentives for Student Volunteers

The Panjab University has decided to give incentives in the shape of credit points to student Instructors and student volunteers for participating in the eradication of illiteracy and mass movement for functional literacy programmes. For making 10, 15 and more than 15 adults literate, the instructors will be given one, two and three credit points, while the volunteers will get the same number of credit points for making two, four and more than four students literate respectively. These incentives will be credited for deciding students' admission to higher classes and professional courses.

Azad Varsity Introduces Home Science

The Chandra Shekhar Azad University of Agriculture and Technology, Kanpur has decided to start a new faculty of Home Science. In the first instance students will be enrolled to the B.Sc. Home Science course. Through this new faculty the university hopes to meet the long standing demand of education of girls in Home Science in Kanpur, in particular, and the State of Uttar Pradesh, in general. The Home Science Faculty building was recently inaugurated by Mr. Narendra Singh, Minister of Agriculture, Uttar Pradesh.

Biotek India 88

An International Conference and Exhibition on Biotechnology called Biotek India 88 will be organised in India in October next year. It will highlight processes, equipment, materials and services related to technologies which the Department of Biotechnology has already identified as priority areas for applications in the health, industry, agriculture, veterinary, energy and ecology sectors.

Some of the technologies which the exhibition will focus on are genetic engineering, immuno and immunochemical technology, biochemical engineering, protein and enzyme technology, microbial technology, bio-electronics, biological process engineering and control, tissue and cell culture technology and bio-informatics.

Tagore Literacy Award

The Indian Adult Education Association has decided to institute a Tagore Literacy Award for women to be presented each year for outstanding work for women literacy.

The Association has also decided to institute a Tagore Endowment Fund to mark the 125th Birth Anniversary of Gurudev Rabindra Nath Tagore. The Association also proposes to set up a resource centre for correspondence education and non-formal education.

Dibrugarh Varsity Restructures Examination

The Dibrugarh University has restructured the examinations for its three-year degree course and reduced them from three to two from the current academic session. Under the new pattern students will take Part I university examination at the end of the second year and Part II examination on completion of the third year. The examination for promotion of students from first to second year will be conducted by the colleges. The new courses and syllabi are expected to be announced soon.

New Courses at Anna University

The University Grants Commission (UGC) has accorded its approval to Anna University for the M.B.A. programme with an annual intake of 30. It has also agreed to provide financial assistance, both recurring and non-recurring, towards building, staff, library and equipment for this course for a period of 5 years.

The Commission has also agreed to give financial assistance to the university for running M.Tech programme in Laser & Electro Optical Engineering with an annual intake of 10 students for a period of 5 years.

Research Support for South Gujarat Varsity

The Department of Education of the South Gujarat University, Surat has been awarded Rs. 10 lakhs grant by the University Grants Commission under its Departmental Research Support (DRS) Programme. Educational technology is one of the major thrust areas of the department. The DRS grant provides for educational hardware, services of technical support personnel and other infrastructural facilities.

Under the DRS scheme, the department will undertake two research projects, namely, (1) Application of Educational Technology for Guidance and Counselling Services at Primary and Secondary School level; and (2) Developing Multi-media Package on Population Education for Creating Awareness among the youth.

Methodology for Women's Studies

The Mother Teresa Women's University, Kodaikanal, proposes to organise a three-day workshop on Methodology for Women's Studies' from 24th to 26th September 1987. The objective of the workshop is to evolve a valid methodology for studying and doing research in Women's Studies' in proper perspective. This will give an exposure to the new ideas and thinking through a series of lecture-cum-discussions with the Resource Personnel, the faculty members, Research Scholars full-time and part-time (Ph.D. and M.Phil.) and Supervisors who have been active in Women's Studies' research and who are deeply involved in development issues.

Renowned scholars like Dr. Malavika Karlekar, Dr. Neera Desai, Dr. Uma Chakravarthy, Dr. Kum Kum Roy, Dr. Aparna Basu, Dr. Prabha Mahale and Dr. C.S. Lakshmi will serve as resource persons.

2 Crore Grant for South Gujarat Varsity

The University Grants Commission is reported to have agreed to provide Rs. 2 crores assistance to the South Gujarat University during Seventh Plan period for the development programmes of the university. The academic programmes proposed to be taken up include (a) Centre for Aquatic Biology; (b) Department of Comparative Literature; (c) Department of Electronic Science; and (d) Department of Computer Applications.

ICAI to Revamp Education Pattern

Radical changes in the pattern of education and updating of course content is contemplated by the Institute of Chartered Accountants of India (ICAI). The Review Committee on Education set up by the Institute in 1984 has submitted its recommendations recently. According to Mr. R. Balakrishnan, President of the ICAI, if the Education Committee's proposals are accepted, the pattern of education would revert back to the old system of admitting students with

Recent Publications

1.	Handbook of Medical Education-1987	: Rs.	45.00
2.	Monograph on Sample Free Item Analysis	: Rs.	50.00
3.	Bibliography of Doctoral Dissertations in Social Sciences & Humanities 1983-84	: Rs.	180.00
4.	Educational Statistics at a Glance	: Rs.	75.00
5.	Education and Economic Development	: Rs.	25.00

Address Enquiries to :

Under Secretary (Publications)
ASSOCIATION OF INDIAN UNIVERSITIES
AIU House, 16 Kotla Marg,
New Delhi-110002
Telephones : **3310059, 3312305, 3312429 and 3313390**
Telex : **31 5578 AIU IN** *Gram* : **ASINDU**

10+2 education as article clerks unlike the minimum prescribed qualifications of a pass in degree examination. The course content would also be updated to reflect the current trends keeping in view the Institute's effort to standardise accounting standards in all professions all over the country. A paper on indirect taxes is also likely to be added at the final examination.

AIU News

AIU Meetings at Anantapur

Sri Krishnadevaraya University, Anantapur will host the 213th Meeting of the Standing Committee of the Association of Indian Universities (AIU) on 23rd September, 1987. The meetings of the AIU Sub-Committee on Education in Human Values, AIU Staff Affairs Committee and Cultural Committee will be held on 22nd September, 1987.

The Standing Committee will consider setting up a Sub-Committee to interact with the ICAR Review Committee. The Review Committee has been set up by the Government to look into the organisational infrastructure, personnel policies, and the functional role of Indian Council of Agricultural Research and its linkages with other related agencies. Some of the crucial issues involved relate to the coordination of the agricultural universities with the general universities ; ICAR system as compared to UGC system pertaining to plan, non-plan and research grants ; and financial support for sports and students services like NCC and NSS in agricultural universities. Another important proposal to come up before the Committee calls for raising loans to deserving students repayable over longer years of period when one is employed. Another related proposal is the introduction of production centres at universities in collaboration with organisations like Khadi and Village Industries Commission, National Small Scale Industries Corporation, etc. These production centres are expected to generate resources and augment experimentation and innovation in the universities. They will also provide students experience in productive work and make available to them 'earn while you learn' opportunities.

There is also a proposal that donations made to universities/deemed universities should qualify for a cent per cent exemption from Income Tax. Presently, there is a provision that each individual university can approach Income Tax authorities for getting a notification issued exempting donations made to it for scientific and social research only. The procedure, however, is long and cumbersome, and there are many restrictions on the use of these donations. The proposal under consideration seeks an amendment to the Income Tax Act, whereby, donations made to universities and deemed universities *ipso facto* enjoy 100% exemption from Income Tax. This will provide universities with a general purpose cushion fund subject, however, to accountability under the university rules.

The Standing Committee will have for its consideration requests from Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow ; Arunachal University, Itanagar ; and Rajasthan Vidyapeeth, Udaipur for membership of the Association. It will also consider the report of the AIU Visiting Committee for grant of regular membership to Bharathidasan University, Tiruchirapalli. In addition, the Standing Committee will consider reports of its sub-committee on Erosion of University Autonomy; Adult Education and Extension ; and Education in Human Values.

To be presided over by Prof. G. Ram Reddy, President, AIU and Vice-Chancellor, Indira Gandhi National Open University, the meeting is likely to be attended by Dr. P.V. Salvi, Vice-President, AIU and VC, Konkan Krishi Vidyapeeth ; Prof. Ramesh Mohan, VC, Meerut University ; Dr. Sukhdev Singh, VC, Punjab Agricultural University ; Prof. V.D. Gupta, VC, Gorakhpur University ; Prof. M. Abel, VC, Sri Krishnadevaraya University ; Dr. S. Krishnaswamy, VC, Madurai Kamaraj University, Dr. H.P. Dikshit, VC, Rani Durgavati Vishwavidyalaya ; Prof. K.N. Shah, VC, Saurashtra University, Prof. Ramlal Parikh, VC, Gujarat Vidyapith ; Dr. K.B. Powar, VC, Shivaji University ; Prof. T. Navaneeth Rao, VC, Osmania University and Dr. S.N. Saraf, VC, Sri Sathya Sai Institute of Higher Learning.

Many Vice-Chancellors will also be attending the National Symposium on Value Orientation in Higher Education at Prasanthinilayam from September 24 to 26, 1987. The symposium has been organized by Sri Sathya Sai Institute of Higher Learning and is sponsored by the University Grants Commission and the Association of Indian Universities.

Sports News

Grants for Inter-Varsity Tournaments Raised

The Govt. of India has made an upward revision in the norms of financial assistance for organising Inter-University Tournaments conducted at various university centres. Thanks to the persistent efforts of AIU, all the organising Universities will be benefited by the revised grants. It will indeed give a big boost to sports in the University Sector.

The scheme of financial assistance was introduced in 1983-84. To determine the quantum of financial assistance, all the Inter-University Tournaments are grouped into 4 categories, namely A, B, C & D. For the tournaments under category 'A', the earlier ceiling of Rs. 20,000 for Athletics has been raised to Rs. 60,000. Similarly, for tournaments included in the category 'B', the limit of Rs. 10,000 goes up to Rs. 15,000. Universities organising other tournaments will receive enhanced funding of Rs. 10,000 and Rs. 7,500 respectively for tournaments under category C & D for which earlier ceilings were Rs. 7,000 and Rs. 5,000.

Enhanced ceilings of grants for various Tournaments are as follows :

Tournaments	Zone	Ceiling Limit of Financial Assistance (Revised)
Category 'A'		
(i) Athletics (M & W)	All India	Rs. 60,000
(ii) Swimming, Diving & Water Polo.	All India	Rs. 30,000
Category (B)		
(i) Cricket (M)	East Zone	Rs. 15,000
	West Zone	Rs. 15,000
	North Zone	Rs. 15,000
	South Zone	Rs. 15,000
(ii) Cricket (W)	All India	Rs. 15,000
(iii) Football	East Zone	Rs. 15,000
	West Zone	Rs. 15,000
	North Zone	Rs. 15,000
	South Zone	Rs. 15,000
(iv) Badminton (M & W)	East Zone	Rs. 15,000
	West Zone	Rs. 15,000
	North Zone	Rs. 15,000
	South Zone	Rs. 15,000
(v) Table Tennis (M & W)	East Zone	Rs. 15,000
	West Zone	Rs. 15,000
	North Zone	Rs. 15,000
	South Zone	Rs. 15,000
(vi) Hockey (M)	East Zone	Rs. 15,000
	West Zone	Rs. 15,000
	North Zone	Rs. 15,000
	South Zone	Rs. 15,000
(vii) Tennis (M)	North Zone	Rs. 15,000
	South Zone	Rs. 15,000
(viii) Tennis (W)	All India	Rs. 15,000
(ix) Volleyball (M)	East Zone	Rs. 15,000
	West Zone	Rs. 15,000
	North Zone	Rs. 15,000
	South Zone	Rs. 15,000

1	2	3
(x) Volleyball (W)	North Zone	Rs. 15,000
	South Zone	Rs. 15,000
(xi) Basketball (M)	East Zone	Rs. 15,000
	West Zone	Rs. 15,000
	North Zone	Rs. 15,000
	South Zone	Rs. 15,000
(xii) Basketball (W)	North Zone	Rs. 15,000
	South Zone	Rs. 15,000
(xiii) Hockey (W)	North Zone	Rs. 15,000
	South Zone	Rs. 15,000
Category 'C'		
(i) Kabaddi (W)	North Zone	Rs. 10,000
	South Zone	Rs. 10,000
(ii) Kho-Kho (M)	North Zone	Rs. 10,000
	South Zone	Rs. 10,000
(iii) Kho-Kho (W)	North Zone	Rs. 10,000
	South Zone	Rs. 10,000
(iv) Handball (M & W)	North Zone	Rs. 10,000
	South Zone	Rs. 10,000
(v) Ball Badminton (M)	North Zone	Rs. 10,000
	South Zone	Rs. 10,000
(vi) Ball Badminton (W)	North Zone	Rs. 10,000
(vii) Boxing	All India	Rs. 10,000
(viii) Chess	North Zone	Rs. 10,000
	South Zone	Rs. 10,000
(ix) Kabaddi (M)	East Zone	Rs. 10,000
	West Zone	Rs. 10,000
	North Zone	Rs. 10,000
	South Zone	Rs. 10,000
(x) Gymnastics and Malkhambh	All India	Rs. 10,000
(xi) Wrestling	All India	Rs. 10,000
(xii) Wt. Lifting and Best Physique	All India	Rs. 10,000
(xiii) Judo	All India	Rs. 10,000
Category 'D'		
(i) Rowing	All India	Rs. 7,500
(ii) Squash Rackets	All India	Rs. 7,500
(iii) Cycling (M & W)	All India	Rs. 7,500
(iv) Cross-country (M)	All India	Rs. 7,500
(v) Cross-country (W)	All India	Rs. 7,500

The Government has also announced a revision in the financial assistance rendered to the Association for organising coaching camps under the NSO Programme. The existing and the revised rates are reproduced below :

This gesture on the part of the Government will result in Higher participation in Inter-University Tournaments. Also with the enhanced grants now available, more and more universities will come forward to organise tournaments. The increase in the messing expenses for players will result in improved diet for sportsmen.

	Current Rate	**Revised Rate**
Boarding and Lodging Expenses	Rs. 26.00	Rs. 40.00 per day
Incidental Charges during Travelling (for every 12 hours of journey or a part thereof).	Rs. 10.00	Rs. 20.00
Expenditure on ground, essential equipment, etc. (Per camp)	Rs. 1,500.00	Rs. 3,000.00
Contingencies (Per camp)	Rs. 500.00	Rs. 1,000.00

Sunita to Lead Varsities Women Hockey Team

Kum. Sunita of Panjab University, Chandigarh is leading the Indian Universities in the Senior National Women's Hockey Championship being organised at New Delhi from Sept. 19 to 26, 1987. The team comprises:

Sunita **(Captain)**	Panjab
Ranjana	Delhi
Jaswinder	Guru Nanak Dev
Kuljeet	Punjabi
M.P. Rekha	Mysore
Namita	Panjab
Aruna Kumari	Mysore
Ranjana Kataria	Panjab
Usha H. Bhatia	Gujarat
Pramjeet Sohi	Panjab
Sarita	Kurukshetra
Meenakshi	Panjab
Sunita Pandey	Delhi
M.P. Kaveriamma	Mysore
A.P. Tara	Mysore
Sarojini	Ranchi

The team underwent training at Delhi University under the supervision of Mr. B. Kandulna, Hockey Coach from Ranchi University.

News from Abroad

Revised Terms for IIEP Fellows

International Institute for Educational Planning (IIEP), Paris has announced revised terms and conditions of the Institute's programme for Visiting Fellows. This programme, offered on an individually-tailored basis, is designed to assist the professional development of selected participants by providing an opportunity for them to study further various theoretical, methodological and practical aspects of planning, implementing and evaluating educational development programmes and to participate in IIEP training and research activities.

It addresses itself primarily to qualified persons who have experience in educational planning and administration (practitioners, experts, scholars, researchers) and who, because of the nature of their duties, have special interests and are only available for specific periods of training or research work.

The programme is intended to be intensive, involving the study in depth of a specific theme or problem in association with one or several designated IIEP specialists. Study topics should be chosen in such a way that they permit a fruitful interaction with the resarch activities of the IIEP as indicated in the Institute's Medium-Term Plan and annual work programme.

Visiting Fellows ordinarily spend from one to six months at the Institute and two main categories of Visiting Fellows are included in this programme:

Research Fellows are visitors of high calibre and internationally acknowledged professional standing whose contribution to the IIEP research and training programme will be of a general, multipurpose nature. Such researchers should already have had previous experience in conducting empirical research.

Associate Research Fellows are visitors who stay for relatively short periods, following a programme organized by the Institute within the framework of specific training activities or research projects.

Exceptionally, a third category of fellow will be considered, i.e. *Training Fellows*, who satisfy IIEP's admission criteria but who can only attend selected units of the Institute's Annual Training Programme, combining such partial training activities with a complementary, individually-designed work plan (readings, study visits, seminars, etc.) under the supervision of one of IIEP's specialists. It must be stressed that such Training Fellows will be accepted only on an exceptional, selective basis, given that any partial attendance in the Annual Training Programme leads to complex reprogramming procedures.

The Institute is not able to provide grants to cover travel and living expenses for Visiting Fellows under its ordinary budget. Each participant or the Institution sponsoring his/her candidature must therefore bear such expenses themselves or obtain a suitable fellowship for this purpose, i.e. from national, bilateral or multilateral granting agencies.

Full details of the programme, including the qualifications required and the application procedure, are available on request from the Director, IIEP, 7-9 rue Eugene-Delacroix, 75116 Paris (France).

We Congratulate . . .

Dr. D.N. Tiwari, I.F.S. who has taken over as Vice-Chancellor, Guru Ghasidas University, Bilaspur (M.P.)

Awards & Medals

INSA Medal for Young Scientists

The Indian National Science Academy (INSA) has selected scientists for the award of INSA Medal for Young Scientists for the year 1987. The selection is based on their significant contribution in their respective fields. The awardees are :

(1) Dr. Ajay Kumar (b. Nov. 17, 1955), Scientist 'B' Division of Membrane Biology, Central Drug Research Institute, Lucknow—for studies on factors/mechanisms responsible for stabilizing the asymmetric distribution of phospholipids in biological membranes using erythrocyte membrane as the model system.

(2) Dr. D. J. Biswas (b. 7-2-1956), Physics Group, Bhabha Atomic Research Centre, Bombay—for his outstanding contributions in the field of Laser Physics and the demonstration of optical chaos using carbondioxide lasers.

(3) Dr. S.K. Biswas (b. 10.11.-1956), Research Associate, Deptt. of Electrical Engineering, Indian Institute of Science, Bangalore—for his innovative contributions towards the analysis, synthesis and implementation of improved performance current source inverter (CSI) fed induction motor drives.

(4) Dr. Dipankar Datta (b. 1.1.1955), Asstt. Professor, Department of Chemistry, Manipur University, Imphal—for his excellent work on parametrisation of ligand effects in inorganic reactions involving complexes of metal ions having closed shell electronic configurations.

(5) Dr. Gotam K. Jarori (b. June 10, 1955), Research Fellow, Solid State Physics-NMR Group, Tata Institute of Fundamental Research, Bombay—for his noteworthy work involving mapping of brain hexokinase active site(s) using magnetic resonance techniques.

(6) Dr. C. Joenathan (b. 24.6.-1958), (Elec. Engg), Project Officer, Engineering Design Centre, Indian Institute of Technology, Madras—for his important and extensive contributions in the use of optical speckle techniques for metrology.

(7) Shri Mohd Islam Khan (b. December 24, 1957), Project Assistant, Molecular Biophysics Unit, Indian Institute of Science, Bangalore—for elaboration of parameters affecting binding of sugars to lectins.

(8) Shri P. Ananda Kumar (b. 14.11.1955), Scientist, Nuclear Research Laboratory, Indian Agricultural Research Institute, New Delhi—for his meritorious work on the photorespiratory nitrogen metabolism in crop plants.

(9) Dr. (Miss) Sujata Lakhani (b. 14.5.1956), Research Associate, Department of Botany, University of Delhi, Delhi—for her outstanding work in the hormonal regulation of enzyme synthesis in wheat embryos during germination.

(10) Dr. (Mrs) Priti Mehrotra (b. 20.11.1958), Scientist, Deptt. of Zoology, Banaras Hindu University Varanasi—for her investigations on the use of cis-platin in activating lymphocytes and macrophages which destroy tumour cells.

(11) Dr. R.D.K. Misra (b. 25.12.1957), Scientist 'C', Defence Metallurgical Research Laboratory, Hyderabad—for his important contributions to our understanding of the interfacial segregation in engineering alloys.

(12) Dr. Sourav Pal (b. 12.5.1955), Scientist, Physical Chemistry Division, National Chemical Laboratory, Pune—for his outstanding contributions to molecular electronic structure using many-body coupled-cluster methods.

(13) Dr. Gopal Pande (b. 26.1.1955), Scientist, Centre for Cellular and Molecular Biology, Hyderabad—for elucidating the mechanism of tumour progression and generation of clonal heterogeneity.

(14) Dr. R. Ramesh (b. 2 June, 1956), Gujarat University's Post-Doctoral Fellow, Physical Research Laboratory, Ahmedabad—for his original contributions to reconstruction of past climates through isotopic studies of tree rings.

(15) Dr. A. Srikrishna (b. 1.1.1955), Lecturer, Deptt. of Organic Chemistry, Indian Institute of Science, Bangalore—for his noteworthy contributions on the application of radical cyclisation route towards simple, general sythesis of bio-active molecules incorporating lactone and furan moieties.

(16) Dr. Vasudevan Srinivas (b. June 6, 1958), School of Mathematics, Tata Institute of Fundamental Research, Bombay—for his significant contributions to the K-theory of singular surfaces. He has extended the earlier work of Mumford and Bloch on smooth projective surfaces to the case of normal projective surfaces.

Correspondence Course in Evaluation Methodology and Examinations

Applications are invited from college/university teachers for admission to Correspondence Courses in Evaluation Methodology and Examinations at Basic Level, Intermediate Level and Advanced Level/ Special Professional Course. The duration of each of the three courses is six months. A personal 'Contact Programme' for three days is planned for each of the three courses. Universities/ Institutions sponsoring candidates can meet the registration/course fee from out of unassigned grants by UGC.

Request for prospectus and application from accompanied by a crossed Indian Postal Order for Rs. 10/- drawn in favour of the Secretary, Association of Indian Universities and a self addressed stamped envelope (Rs. 2/-) should reach the Project Director (Exams), Association of Indian Universities, 16 Kotla Marg, New Delhi 1100002. **Last date for receipt** of applications is **5th October** for non-sponsored and **10th October, 1987** for sponsored candidates.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
October 5-9, 1987	Short-term Course on Advanced Image Processing for Remote Sensing.	To appraise the scientists/engineers, working in the area of Image Processing and its Applications to Remote Sensing, regarding techniques, developments and future trends in the field of Image Processing.	Indian Space Research Organisation (ISRO) in collaboration with IIT, Bombay.	Dr. T.V. Pavate, Chief Project Engineer [CSRE], Principal Programme Coordinator (Training), ISRO-IIT (Bombay) Space Technology Cell, CSRE Building, Indian Institute of Technology, Powai, Bombay, 400 076.
November 16-20, 1987	Seventh National Symposium on Radiation Physics	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
November 25-27, 1987	International Conference on Mud Architecture	To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.	Ministry of Urban Development, Govt. of India, in collaboraton with the Govt. of Kerala, HUDCO and the All India Housing Development Association.	Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & & Urban Development Corporation, K.G. Road, Bangalore - 560 009.
November 26-28, 1987	International Seminar on Instrumental Methods of Electro-Analytical Techniques.	To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electro-analysis.	Indian Institute of Science, Bangalore.	Prof. M.H. Dhananjaya, Principal and Chairman or the Organising Committee, S.J. College of Engg., Mysore.
December 7-11, 1987	Seventh Triennial International Conference on Thin Films. (ICTF-7)	To take stock of recent progress in the field of science, technology and applications of their films.	Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.	Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.
December 16-18, 1987	International Symposium on Electronic Devices, Circuits and Systems	To provide a forum to research workers all over the world for exchange of information and technical perceptions in electronic devices, circuits and systems.	Indian Institute of Technology, Kharagpur	Prof. N. B. Chakravarti, Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur - 721302
December 18-19, 1987	National Conference on Role of Universities in Implementation of NewEducation Policy	The Conference will focus on Management of Higher Education, Improvement in Efficiency and New Strategies in Higher Education vis-a-vis New Education Policy	Association of Indian Universities in collaboration with Osmania University, Hyderabad.	Dr. V. Natarajan, Project Director (Exams) Association of Indian Universities, 16, Kotla Marg, New Delhi-110002
December 28-30, 1987	Third National Conference on Surfactants, Emulsions and Biocolloids.	To provide an opportunity to technologists and experts from academic and research institutions and industries to exchange views and discuss developments related to latest findings from active research.	Aligarh Muslim University in collaboration with Indian Society for Surface Science and Technology.	Dr. H.N. Singh, Reader, Department of Chemistry, Aligarh Muslim University, Aligarh.

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Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

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ADDITIONS TO AIU LIBRARY

Acharyya, N.N. *Brief history of Assam.* Guwahati, Omsons, 1987. x, 293p.

Altbach, Philip G. *Higher education in the third world : Themes and variations.* Delhi, Radiant Pub. (c 1987) 239p.

Apple, Michael W. *Teachers and texts : A political economy of class and gender relations in education.* New York, Routledge & Kegan Paul, (c 1986). viii, 259p.

Bepin Behari. *Unemployment, technology and rural poverty.* Delhi, Vikas, (c 1983). ix, 453p.

Biswas, Anupam. *Professional computer programming with Illustrations in COBOL.* Bombay, Popular Prakashan, 1987. viii, 132p.

Brancazio, Peter J. *Sport science : Physical laws and optimum performance.* New York, Simon and Schuster, (c 1984). 400p.

Brookfield, Stephen. *Learning democracy : Edward Lindeman on adult education and social change.* London, Croom Helm (c 1987) 238p.

Dobb, Maurice. *Theories of value and distribution since Adam Smith : Ideology and economic theory.* Delhi, Vikas, (c 1973). 295p.

Ennals, Richard and Others, ed. *Information technology and education : The changing school.* Chichester, Ellis Horwood, (c 1986). 236p.

Evaluation your system : Computer operations guide. New Jersey, Management Information Corp,, (c 1979). discontd.

Ezersky, Eugene M. and Theibert, P. Richard. *Facilities in sports and physical education.* Saint Louis, C.V. Mosby. 1976. ix, 193p.

Guy, Rebecca F. and others. *Social research methods : Puzzles and solutions.* Boston, Allyn and Bacon, (c 1987). ix 470p.

Harrison, Mark. *Practical C.* Cheshire, Sigma, (c 1985). 173p.

Horowitz, Ellis. *Fundamentals of programming languages.* Delhi, Galgotia, (c 1984). xv, 446p.

Jamil Farooqui. *Academic elite and social structure.* Delhi, Adam, 1986. ix, 275p.

Kahn, Herman. *World economic development 1979 and beyond.* Delhi, Vikas, 1985. xxi, 519p.

Khanna, Kirti. *Role-structure of academics : A profile of university teachers.* Jodhpur, Jain Bros. (c 1987). xi, 146p.

Khokar, Mohan. *Dancing for themselves : Folk, tribal and ritual dance of India.* Delhi, Himalayan Books, 1987, 173p.

Khurshid, Anis. *Library education in India, Pakistan and Iran.* Delhi, Indian Bibliographies Bureau (c 1987). 190p.

Krishan Kumar. *Theory of classification.* Delhi, Vikas, 1985. ix, 538p.

Larson, Leonard A. *Foundations of phpsical activity : Applications as disciplines and professions.* New York, Macmillan (c 1976) ix, 386p.

Lengrand, P. *Areas of learning basic to lifelong education.* Oxford, Pergamon (1986) xvi, 251p.

McGarvey, Brian and Swallow, Derek. *Microteaching in teacher education and training.* London, Croom Helm (c 1986) 205p.

Naisbitt, John and Aburdene, Patricia. *Re-inventing the corporation.* New York, Macdonald. (c 1985) xi, 308p.

Rivera, William M. ed. *Planning adult learning : Issues, practices and directions.* London, Croom Helm (c 1987) 189p.

Schubert, William H. *Curriculum : Perspective, paradigm and possibility.* New York, Macmillan (c 1986), xviii, 478p.

Senior, Barbara and Naylor, John. *Educational responses* *to adult unemployment*. London, Croom Helm (c 1987) 174p.

Sharma, Pawan K. *Management information system in the institutions of higher learning*. Jaipur, Kuber Associates, 1987, iv, 89p.

Sodhi, T.S. *Adult education : A multidisciplinary approach*. Ludhiana, Katson (c 1986) x, 244p.

Waite, Mitchell and Pardee, Michael. *Microcomputer primer*. Indiana, Howard W. Sams and Co. (c 1980), 384p.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Dansena, Ganga Prasad. *Shreemad Bhagvadgeeta per Shankar, Ramanuj evam Tilak ke bhashyon ka tulnatmak adhyayan*. Ravishankar.
2. Panda, Debashree. *The concept of Avatara in the prasthanatraya in the light on Samkara's commentaries*. Utkal.
3. Prabha, M.L. *Schools of Indian thought : A new interpretation*. Bangalore.
4. Saxena, Dilip. *Naitikta : Vyaktigat evam sansthatmak ka sar*. Rajasthan.
5. Valappil, Vijayakumari. *The concept of freedom in the philosophy of Jean Paul Sartre*. Calicut.

Fine Arts

Drawing & Painting

1. Sharma, Chandra Mohan. *Uniyar ke bhitti evam laghu chitron ka sameekshatmak adhyayan*. Rajasthan.

Language & Literature

English

1. Basu, Kalpana. *From error to happiness : The moral design in Dicken's later novels, 1854-65*. Burdwan.
2. Chadha, Ramesh. *Cross cultural interaction in the novels of Jhabvala and Markandaya*. HP.
3. Chander Kanta. *Protagonists in the novels of Bernard Malamud. A study in human suffering*. Kurukshetra.
4. Ishwar Chander. *Heroines in the plays of Tennessee Williams*. Kurukshetra.
5. Jha, Ashok Kumar. *An evaluative study of English at the B. Ed. levels*. Rajasthan.
6. Joanus, Fr. Sararimuthu A. *A study of influences on Gerard Manley Hopkins*. Madurai.
7. Nandrajog, Dharam Pal. *Social criticism in the novels of Hamlin Garland, Frank Norris and Jack London*. Kurukshetra.
8. Parameswari, D. *A psychological study of the fiction of Virginia Woolf*. Madurai.
9. Sharma, Chander Mohan. *Saul Bellow and the Big City : A study of City Metaphor in Saul Bellow's fiction*. Kurukshetra.
10. Singh, P.N. *Christopher Caudwell and the British Marxist criticism in the 1930s*. Rajasthan.
11. Snehaprabha, M. *Southern identity and the pattern of opposites in the novels of Carson McCullers*. Calicut.
12. Surender Singh. *Minor characters in Hemingway's fiction*. Kurukshetra.

Sanskrit

1. Bhattacharyya, Dilip Kr. *Sanskrita samalochana sahitya Mandar-Makaranda Champu*. Burdwan.
2. Kar, Niranjan. *Srimad Gajapati Ramachandra Deva Pranitasya Sri Krishna Bhakta Vatsalya Charitam sameekshyatmakam adhyayanam*. Jagannath.
3. Paster, Sr. *A critical study of the Krishthu Bhagavatam of Prof. P.C. Devassia*. Calicut.
4. Sharma, Rameshwar Datt. *Unnisvin-bissavin shatabdi ke Haryana Sanskrit Mahakavyon ke sameekshatmak adhyayan*. Kurukshetra.
5. Sharma, Vinod Kumar. *Jyotish ko Jaipur ka yogdan*. Rajasthan.

Punjabi

1. Harbans Kaur. *Bhai Vir Singh de navlan da themic adhyayan*. Kurukshetra.
2. Harsimran Singh. *Punjabi novel as Galpi Paradigms*. Kurukshetra.
3. Rattan, Tek Chand. *Punjabi novel, 1950-75 vich rashtravadi chetna*. Kurukshetra.
4. Virk, Narinder Singh. *Punjabi novel da samaj vigyan, 1900-1960*. Kurukshetra.

Hindi

1. Gupta, Pushpa. *Swatantrayottar Hindi natak mein rashtriya bhavana, on the basis of dramas written upto 1975*. Calcutta.
2. Jadhav, Balwant Sadhu. *Dalit characters in Premchand's novels and short stories*. Shivaji.
3. Kejriwal, Kusumlata. *Swatantrayottar Hindi natak mein prayog aur parampara*. Calcutta.
4. Muraleedharan, A.M. *Various trends and concepts of modern Hindi poetry after 1970*. Calicut.
5. Om Prakash. *Arya Samaj kee Hindi dharmik aur darshnik sahitya ko den*. Panjab.
6. Patel, P.R. *Hindi aur Gujarati ke anchalik upanyas sahitya ka tulnatmak adhyayan*. Saurashtra.
7. Sathe, Nilkanthrao Trimbakrao. *Dinkar Jee ke prabandh kavyon ka manovaigyanik adhyayan*. Bhavnagar.

8. Satya Vir. *Gheesa Panth : Siddhanta aur sahitya.* rukshetra.

9. Sharma, Jitendra Kumar. *Adhunikta ke sandarbh mein ithakon ka prayog : 1950 iswi se 1975 iswi tak kee kavita ein.* Kurukshetra.

10. Sharma, Karan Kumar. *Hindi paryayon ka adhya- n : Manviya gunatmak sangyaon ke sandarbh mein.* Panjab.

11. Vaid, Yash Paul. *Swatantrayottar Hindi kahani mein rakartvad evam ashleelta.* Kurukshetra.

12. Yogish Kumar. *Nirmal sampradaya ke alok mein Iari Adrisht Satsaya ka adhyayan : Mool rachna ke sampadan e sath.* Panjab.

Irdu

1. Imran Ahmad. *Mirza Ruswa ke navelon ka samajiyati nutalia.* Jamia.

2. Shabbir Ahmed. *ABR Ahsani : Life and works.* Calcutta.

3. Waseem Ara. *Syed Masood Hasan Rizvi Adeeb : Adabi ravaiyyon aur tangeedi va tehqeeqi khidmat ka tajziyati nutalia.* Jamia,

Bengali

1. Chattopadhyay, Bharati. *Sarat Chandra O Bibhutibhusaner sahitya sisucharitra.* Calcutta.

2. Ray, Ranjit. *Madhya Yuger Bangla kavye loukik samskar biswaser parichaya.* Calcutta.

3. Sena, Sudebchandra. *Bangal natake samaj-bhabana-o-silpasristi, 1939-1969.* Calcutta.

Oriya

1. Mohanty, Durga Charan. *Pandit Basudev Mohapatra : Eka adhyayana.* Utkal.

2. Sahoo, Udayanath. *The influence of different shastras on Sarala Mahabharat.* Utkal.

Gujarati

1. Dave, A.V, *Short stories of Dhumketu : A critical study.* Saurashtra.

Rajasthani

1. Mehta, Gyanwati Baid. *Rajasthani lok natya tatha uska sangeet paksh.* Rajasthan.

Persian

1. Viquar, Ayesha. *Hindustan mein Farsi masnaviyan.* Nagpur.

Tamil

1. Arumugam, S. *A study on T. Janakiraman's short stories.* Madurai.

2. Balasubramanian, P. *Tamil sothida noolkalil sarhaka kanippin adippadaigal-Thonipparvai sathaka alangaram.* Madurai.

3. Chinta Nila Devi. *A study of Paripadal.* Madurai.

4. Jeyapandian, C. *Worship of little deities in Madurai City.* Madurai.

5. Kandasamy, V. *A study of Pateswaraswamy Temple, Perur.* Madurai.

6. Krishnamurthy, P. *Imagery in Periyapuranam.* Madurai.

7. Krishnasamy, V. *Tamilil kulanthaippadalgal.* Madurai.

8. Kumaraswamy, S. *A critical study of Kalamkakam literature in Tamil.* Madurai.

9. Lokamabal, S. *Yuddhakandam and Sundarakandam in Kamba Ramayana : Their importance as a forum for the revelation of its characters.* Calicut.

10. Meyyappan, M. *Devara kalathil samudaya valkkai.* Madurai.

11. Muthu, Rita S. *Thembavani, Seerappuranakkathaigal: A comparative study.* Madurai.

12. Muthulakshmi, S. *A study of village deity worship in and around Palani.* Madurai.

13. Raja, K. *Tholkappiyamum elakkiya vagaimai valarchiyum.* Madurai.

14. Saradhambal, C. *Classicism in Sangam literature.* Madurai.

15. Sellakani, T. *A comparative study of the ethical values in the Tamil new testament and the books of Pathinenkilkanakku.* Madurai.

16. Sreekumar, S. *Mudiarasan Padaippugal Or Aiyvu.* Madurai.

17. Velliangiri, P. *Thiruppughazhil Uvamaikalum Saiva siddhanthaththin thakkamum.* Osmania.

Telugu

1. Sarwamangaleswara Sastry. Upadrasta Venkata Subramanya. *Ananta Pantula Ramalinga Swamy 'Gari rachnalu : Samagra pariseelana.* Andhra.

Geography

1. Gholap, Tukaram Namdeo. *Distribution of livestock and fodder supply in Maharashtra.* Shivaji.

History

1. Behar, Ram Kumar. *Bastar ka adivasi sangarsh, 1876 se 1921.* Ravishankar.

2. Bhattacharyya, Malaysankar. *Nationalist movement and freedom struggle in some selected areas of Northern Bengal. 1857-1947.* NBU.

3. Jain, Sharad Chandra. *Tumbat (Tumain) ka puratattwa.* HS Gour.

4. Mohammad Reazul Hoque. *Muslims of North-West Frontier Bengal and Bengali folk literature.* NBU.

5. Paramathalingam, C. *Social reform movement in Tamil Nadu in the 19th century with special reference to St. Ramalinga.* Madurai.

6. Patra, Kartikeswar. *A historical study of the ports of Orissa, from 16th century to 19th century.* Utkal.

7. Pruthi, Kamal Kumar. *Hindi ke itihas ke srot.* HP.

8. Raghubir Singh. *Jodhpur and later Mughals, 1707-1752.* Kurukshetra.

9. Sangwan, Sat Pal. *Science and technology in India under the Company Rule, 1757-1857.* Kurukshetra.

10. Sethuraman, G. *Rameswaram Temple : A historical study.* Madurai.

11. Stephen, S. George. *Working of the permanent settlement in Coastal Andhra.* Madurai.

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(An Institute of National Importance)

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Post-doctoral Programmes : Academic Session Commencing January—1988

Qualified Indian nationals desirous of seeking admission to the various Post-dotoral Programmes commencing on January 1, 1988 are invited to apply in the prescribed form (non-transferable) which can be had of the Institute on request accompanied by a Bank Demand Draft of value of Rs. 10/- drawn in favour of SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES & TECHNOLOGY, TRIVANDRUM. The request should clearly state the name of the candidate, the programme to which admission is sought and the particulars of demand draft (number, branch, bank and date of issue).

Programmes Offered

3-Year DM Cardiology, DM Neurology and M.Ch. Cardiovascular Thoracic Surgery with 2 seats each.

3-Year and 5-Year (less 1 Year) M.Ch. Neurosurgery with 2 seats in all.

1-Year Post-doctoral Certificate in (a) Cardiovascular & Neurosurgical Anaesthesia and (b) Cardiovascular & Neuro Radiology with 4 and 2 seats respectively.

Minimum Educational qualification for entry

3-Year DM Programmes : MD in general medicine or Paediatrics.

Note : Candidates with MD in Psychiatry with a minimum of six months residency posting in General Medicine and Neurology during the said course can apply for DM (Neurology).

3-Year M.Ch. Programmes : MS in General Surgery.

5-Year M.Ch. (Neurosurgery) Programme : MBBS degree and one year post registration house surgdoncy/residency in general surgery from a University/PG Institute/Teaching hospital recognised by the Institute. Candidates selected under this provision will be entitled to one year exemption. Candidates without one year experience in general surgery (as mentioned above) need not apply.

Post-doctoral Certificate in Anaesthesiology Radiology : MD/MS Degree in Anaesthesiology/Diagnostic Radilogy

Note : All the aforesaid qualifications should have been obtained from an Indian University recognised by the Institute or from the National Board of examinations or from any other period recognised by the Institute.

Only those who satisfy the minimum qualifications prescribed are advised to apply for admission. Those who expect to qualify before the date of seection may forward their application by the closing date prescribed. However, they will not be called for the selection test unless evidence of having obtained the necessary qualification is produced latest by 11th Dec. 1987. Candidates are not allowed to apply for more than one programme. Candidates with more than two failures in the University or equivalent examinations are not eligible for admission.

Admission to the programmes will be based on the candidates previous academic record and their performance in the selection tests to be held at the Institute from 18th Dec. till 20th Dec. 1987.

Reservation exists for SC/ST candidates as per rules of the Institute. Suitability for admission (against reserved seats) will be assessed independently of others. In case of non-availability of suitable SC/ST candidates the seats reserved will be diverted to general category.

Those selected will be paid fixed scholarship per month. The value will be Rs. 3100/- (MD/MS degree holders) and Rs. 2575/- for 5 year programme candidates during the first year.

Closing Dates

Last date for issue of forms by Post	: **19 Oct. 1987**
Last date for receipt of completed form at the Instt. (alongwith non-refundable registration fee of Rs. 30/-)	: **31 Oct. 1987**

The applications received beyond the last dates are liable to be rejected.

The details of qualifications, selection procedure, reservation, sponsorship, scholarship and general canditions will be as given in the Prospectus for the year 1988.

DIRECTOR

CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF ROORKEE
ROORKEE

dvt. No. Estt (A)/2/A-87 (Advt.) **Dated : Aug. 22, 1987**

Applications on prescribed forms, obtainable from the Registrar, either per- onally or by sending a self-addressed envelope (9'' x 4'') affixed with 1.40 paise tamps, are invited for the following posts. Higher starting salary could be offered o candidates based on their qualifications and experience. Applicants should not enerally be above the age of 55 years. Candidates in employment are required o send their applications through proper channel. Applications received late/ ncomplete or without required remittance may not be entertained.

Last Date of receipt of applications on prescribed form alongwith application ee of Rs. 10/- (By Bank Draft or Indian Postal Order in favour of Registrar, Uni- ersity of Roorkee) is **30.9.1987** and for overseas candidates is **30.10.1987**.

[Abbrevations used : R-Regular; TLR-Temporary, Likely to be made Regular; T-Temporary]

Sl. No.	Department	Professor (1500-2500)	Reader (1200-1900)	Lecturer (700-1600)
A.	ENGINEERING DEPARTMENTS			
1.	Elect. Engg.	1R	10R + 1T	4R + 4T
2.	W.R.D.T.C.	3TLR	8R + 1T	
3.	I.P.T.	2R + 1T	1R	4R
4.	Chemical Engg.	1R	1R	5R+1TLR
B.	SCIENCE DEPARTMENTS			
1.	Physics		1TLR	3TLR+1T
2.	Earth Sciences		2R+2T	4R+1T+1TLR
3.	Bio-Sciences		1R	
4.	Hum. & Social Sc.	1R	3R+1T	1R

C. OTHER POSTS

1. Scientific Officer (Physics) 1T 700-1600)
2. Research Associate (Physics) 1T Rs. 1400 consolidated with annual ncrease 100/- upto a maximum 2000).
3. Asstt. Archivist (Archival Cells) T (770-1600)
4. Coordinator (A.V.R.C.) 1T 1200-1900)
5. Producer (A.V.R.C.) 1T (700-1600)
6. Asstt. Engineer (A.V.R.C.) 1T 850-1700)
7. Production Asstt. (A.V.R.C.) 1T 850-1700)
8. Cameraman Grade I (A.V.R.C.) T (770-1600)
9. Cameraman Grade II (A.V.R.C.) T (690-1420)
10. Assistant Registrar—2R (770-1600)
11. Asstt. Accounts Officer—2T (690-1420)
12. Asstt. Supdt. Workshop-2R Rs. 850-1720 (For Degree Holders) & Rs. 770-1600 (For Diploma Holders)
13. Librarian (Central Library) 1R (1540-2200)

Qualifications for other Posts

Scientific Officer (Physics)—1T

Essential : M.E. (In Electronics/ Electrical Engg.) or M. Phil/M.Tech.—Instrumentation with one year's practical experience. Or Ph.D. in Experimental Physics with design and fabrication of measuring instruments.

Desirable : Scientific Officer is required to coordinate the maintenance and development of instrumentation activity of the department, therefore, preference will be given to a candidate having experience of such type of coordination activities.

Research Associate (Physics)—1T

Qualifications : Consistently good academic record with first class atleast at Master's or Bachelor Level, with experience as below :

Grade D—2 Years. Grade C—1 Year, Grade B— 1 Year

Specialization : Solid State Physics/ Atomic - Molecular Collision/Atmospheric Physics.

Assistant Archivist (Archival Cells)—1T

Qualifications : M.A. Modern Indian History with Ist division or IInd division with 50% marks and Diploma in Archival and Historical Research with 5 years experience.

Co-ordinator (Audio Visual Research Centre)—1T

Qualifications : Degree of a recognised Institute in Cinema (Direction or developmental communication) with 6 years experience in Direction of Television/Film Production.

OR

(a) Doctor's Degree in Science/ Technology, (b) Consistently good academic record with at least first class at Master's or Bachelor's level, (c) 5 years experience in research/teaching. Preference will be given to person having some experience in T.V./Film production and allied fields.

Producer (A.V.R.C.)—1T

Qualifications : Degree or Diploma of a recognised Institute in Cinema (Direction or in Developmental Communication) OR Degree atleast second class of a recognised University OR equivalent qualification and 3 years experience of Direction in Television (Film Production).

Assistant Engineer (A.V.R.C.)—1T

Qualifications : B.E. in Electronics/ Elect. Engineering or M.Sc. in Physics with Electronics as Specialization.

OR

Diploma in Radio Engineering or Television with 10 years experience in handling/repairing T.V./Audio Visual Equipment.

Production Assistant (A.V.R.C.)—1T

Qualifications : Degree in dramatics OR Dipioma in National School of Drama OR equivalent Diploma of a recognised University/Institute or Graduate OR equivalent and atleast 2 years experience of Programme Production Asstt. in Films/T.V. theatre or Radio OR Degree in any discipline with atleast second class of a recognised University and two years experience of educational Research/Evaluation/Production of A.V.M.

Cameraman Grade I (A.V.R.C.)—1T

Essential : Diploma or Degree in Cinematography from recognised Institute.

Desirable : 3 years experience in Motion Picture/T.V. (Video) Photography. (The experience requirement is relaxable under exceptional cases).

Cameraman Grade II (A.V.R.C.)—1T

Qualifications : Diploma or Degree in Cinematography from a recognised Institute.

OR

Degree in Mass Communication from a recognised Institute/University.

OR

Three years Diploma in Electronics/ T.V./Electrical with 7 years experience.

Assistant Registrar—2R

Essential

(i) A good Bachelor's degree in any field of Arts, Science, Commerce or Engineering.

(ii) Not less than 5 years administrative/Academic experience.

(iii) A good knowledge of Hindi and English.

Desirable

(i) A Master's degree or a degree in Law or in Business administration.

(ii) Experience in University administration/examination work.

Note

(i) For Asstt. Registrar (Admn.), Administrative experience.

(ii) For Asstt. Registrar (Exam), Examination experience should be mentioned as the case may be.

Assistant Accounts Officer—2T

Essential : (a) Second class graduate with 8 year's experience of Audit & Accounts work in Government Deptt. or Autonomous body.

(b) Good knowledge of Hindi.

Preferential : Diploma of Institute of Chartered Accounts of India or passed S.A.S. examination conducted by the Controller & Auditor General of India.

Assistant Supdt. Workshop (University Workshop)—2R

Qualifications : A Master's degree in Mechanical/Production/Industrial Engineering with atleast one year shop floor experience OR a Bachelor's Degree or equivalent in Mechanical/Production/ Industrial Engineering/with 5 years experience, out of which atleast 2 years should be shop floor experience and minimum of 2 years teaching experience of subjects related to workshop Technology at University level.

OR

Three years Diploma or equivalent in Mechanical/Production Engineering with a minimum of 8 years of experience, out of which atleast 4 years be shop floor experience.

Desirable : Administrative experience of Engineering Workshop.

Librarian (Central Library)—1R

Qualifications : M.Lib.Sc. with atleast 5 years experience of Library.

NOTE

1. For Science & Engineering Departments U.G.C. prescribed qualifications are applicable. These qualifications will not apply to deputationists whose suitability for the posts will be judged on the basis of experience and accomplishments. Other details alongwith specialization etc. will be supplied alongwith application form.

2. Number and nature of posts shown above may change at the time of selection.

3. Only Indian Nationals need apply.

REGISTRAR

NATIONAL INSTITUTE OF HYDROLOGY JAL VIGYAN BHAWAN ROORKEE

Advertisement No. 6/87-NIH

Dated : September 1, 1987

Applications are invited for the following posts in National Institute of Hydrology (A Govt. of India Society) Roorkee from Indian Nationals Satisfying qualifications and experience laid down therefor :

1. Scientist 'E' : Posts in the area of:

Surface Water Hydrology	—2 Posts
Water Resources System	—1 Post
Drought Management Studies	—1 Post

Scale of Pay : Rs. 3700-125-4700-150-5000. Total emoluments at the initial of the scale is Rs 3980/- excluding H.R.A.

Age : Below 45 years

Qualifications : 1. High Academic qualifications in Civil Engineering with specialisation in Hydrology or Water Resources, or equivalent.

2. Ph.D. Degrees desirable.

3. Experience in Field Problems, Corporate membership in professional Institutions desirable.

4. About 7 years experience in teaching, research, design or planning.

5. Proven ability of conducting and guiding research.

2. Scientist 'C' : 4 posts in the following areas : Water Resources System/Surface Water Hydrology/ Drought Studies. — 4 Posts

Scale of Pay : Rs. 3000-100-3500-125-4500. Total emoluments at the initial of the scale is Rs. 3240/- excluding H.R.A.

Age : Below 40 years.

Qualifications : I—A Bachelor's Degree in Civil Engineering with minimum of 60% marks or 7.0/10.0 CPI or equivalent.

OR

Master's degree with specialisation in Water Resources/Hydraulic Engineering/Hydrology, with minimum of 60% marks or 7.0/10.0 CPI equivalent.

II—5 years experience of Design/Teaching, research in Institutions dealing with Water Resources area.

Desirable : Ph.D. in Science/Engineering.

Note : Selected persons for Scientist 'E' and 'C' can be appointed on deputation basis also.

The above mentioned posts carry usual allowances as admissible under the Central Government Rules. Age will be relaxable for persons already in Service in the Institute and other Govt./Semi-Govt./Autonomous organisations as well as candidates belonging to SC/ST community, retrenched employees of Defence Services and physically handicapped persons, as per rules of the Govt. of India.

Age will be determined as on 30.10.1987.

Persons already employed in Govt./Semi-Govt./Autonomous bodies should apply through proper caannel. Application not forwarded through proper channel may not be considered.

Candidates applying for more than one post should use separate application form for each post and remit fees separately for each post.

Application forms may be obtained by 15.10.1987 from the Chief Administrative Officer, National Institute of Hydrology, Jal Vigyan Bhawan, University of Roorkee Campus, Roorkee-247667 (UP). Application forms duly completed in duplicate with copies of all testimonials alongwith an application fee in the form of Indian Postal Orders of Rs.8/- (SC/ST candidates are exempted from payment of fee) payable to the National Institute of Hydrology at the Roorkee University Post Office should reach the Chief Administrative Officer, National Institute of Hydrology, Jal Vigyan Bhawan, University of Roorkee Campus, Roorkee-247667 (UP) on or before **30.10.1987**.

Job Location : Anywhere in India.

GOA UNIVERSITY

Applications are invited for the following posts in the prescribed form (10 copies) together with zerox copies of certificates and an application fee of Rs. 10.00 (Rs. 5.00 for candidates belonging to SC/ST) so as to reach the Registrar, Goa University, P.O. Santa Cruz, Goa—403 005 on or before **30th October, 1987** from inland candidates and before **16th November, 1987** from candidates abroad. Prescribed forms of application can be had in person free of charge from the Registrar's office, or on payment of Rs. 10.00 by crossed D.D. drawn in favour of the Registrar on the State Bank of India, Bambolim, Goa, if required by post.

Sr. No.	Name of the Post	No. of Posts
1.	Professor of Computer Science & Technology	1
2.	Professor of Commerce	1
3.	Professor of Business Administration	1
4.	Reader in Economics	1 $ ST
5.	Reader in Microbiology	1
6.	Reader in Geology	1
7.	Reader in Marine Science	1 $ ST
8.	Reader in Computer Science & Technology	1
9.	Reader in Commerce	1
10.	Reader in Business Administration	1
11.	Lecturer in English	1
12.	Lecturer in History	1
13.	Lecturer in Economics	1
14.	Lecturer in Political Science	1
15.	Lecturer in Chemistry (one each in Organic, Inorganic and Physical Chemistry)	3 * SC
16.	Lecturer in Microbiology	2
17.	Lecturer in Geology	2
18.	Lecturer in Computer Science & Technology	1
19.	Lecturer in Commerce	1
20.	Lecturer in Business Administration	2

2. The minimum qualifications and the scales of pay will be as prescribed by the University Grants Commission from time to time. The posts also carry allowances as admissible to the State Government employees. A higher starting pay may be considered for exceptionally qualified person.

* Reserved for Schedule Caste.
$ Reserved for Scheduled Tribe.

It may be noted that if the suitable candidates under reserved category are not available the posts would be filled by candidates from general category.

Dr. S.K. Gandhe
REGISTRAR

INDIAN INSTITUTE OF GEOMAGNETISM

COLABA, BOMBAY—400 005
Advt. No. 5/87

(An autonomous Institue under the Ministry of Science and Technology—DST—Government of India)

Invites applications from Indian Nationals for the following temporary posts under the DST's Research Project titled 'Marine Geoelectromagnetic Studies of Deep Sea Fans of Bay of Bengal'.

1. Scientist (Reader)—1 post (Scale : Rs. 3000-4500 revised).

Qualification

Essential : (i) A good Master's degree (preferably Ph.D.) in Physics, Applied Physics, Geophysics, Radio Physics or Applied Mathematics of a recognised University.

(ii) Five years research experience as evidenced by published papers in geomagnetism and related fields.

Desirable experience in :

(a) Electrical and Electromagnetic studies of the Earth's interior.

(b) Design and development of instruments for above studies.

(c) Numerical methods and computer programming.

(d) Marine magnetic surveys.

2. Senior Scientific Assistant/Senior Technical Assistant—2 posts (Scale Rs. 1640-2900 revised).

Qualification

Essential : Master's degree in Physics, Applied Physics, Geophysics (Geomagnetism), Radio Physics, Geology or Applied Mathematics of a recognised University.

OR

B. Tech or B.E. in electronics or computer science or instrumentation from a recognised University or Indian Institute of Technology.

Desirable : Knowledge and experience in one or more of the following :

(a) Computer Programming
(b) Statistics and Numerical analysis
(c) Electronics
(d) Geomagnetism and related fields
(e) Marine magnetic surveys

Note : (i) Meritorious candidates who show commitment to science during duration of the projects are likely to be considered for regular section.

(ii) If proper candidates are not available for the advertised posts, the vacancies will be filled up by making offers in the next suitable scale.

(iii) Qualifications are relaxable for otherwise suitable persons.

(iv) The work will involve participation in oceanic crises.

(v) The posts carry usual allowances permissible to Central Government employees posted in Bombay.

Prescribed applications form can be had by post from ADMINISTRATIVE OFFICER, INDIAN INSTITUTE OF GEOMAGNETISM, DR. NANABHAI MOOS MARG, COLABA, BOMBAY 400 005 by sending a self-addressed and stamped (Re. 1.00) envelope of 10 cm x 25 cm size. Completed applications should be sent in a cover superscribed with application for the post of...........so as to reach the Administrative Officer within 30 days of the publication of this advertisement.

INDIAN COUNCIL OF MEDICAL RESEARCH

Applications are invited for the post of Project Officer for Co-ordinating Unit of National Cancer Registry Projects (Technical Wing) at Tata Memorial Centre, Bombay.

Job Requirements

(a) He/She will be the technical incharge for the National Cancer Registry Projects of the ICMR.

(b) He/She will guide the registries in conducting any studies related to working of cancer registries as well as epidemiological and intervention studies.

(c) He/She will review the progress of each registry periodically and prepare the necessary reports.

Qualifications & Experience Essential

(i) (a) MBBS or M.Sc. of a recognised University; and

(b) M.D./Ph.D/D.Sc., in Medicine/Pathology/Microbiology / Epidemiology/Oncology/Biostatistics or related disciplines or equivalent postgraduate qualifications.

(ii) Research experience of 15 years with original work to the credit of candidate in epidemiology related to oncology.

(iii) Administrative experience in a responsible capacity.

(iv) Knowledge and experience in the operation of cancer registry.

Salary/Conditions of Service

The scale of pay attached to the post is Rs. 2000-125/2-2500 (pre-revised) plus allowances as per Central Government Rules.

Private practice is not allowed. However, non-practising allowance is admissible to medical graduates only as per rules of the Council.

Age

Below 50 years. SC/ST candidates are allowed relaxation in accordance with Government of India rules.

Candidates called for interview will be paid Ist Class rail fare. Only concessional rail fare, if available, will be allowed. No. TA/DA is admissible for joining the post or on termination of appointment.

Applicants from Central/State Govt. Departments Public Sector Undertakings and Government funded Research Bodies must be forwarded through proper channel.

Applications can be obtained from the Office of the Director-General, Indian Council of Medical Research, Post Box No. 4508, Ansari Nagar, New Delhi-110029, upto **16th Oct., 1987** forms duly completed should be sent to the Director General, Indian Council of Medical Research, Post Box No. 4508, Ansari Nagar, New Delhi, with a crossed Indian Postal Order for Rs. 8/- payable to the Director-General, ICMR, New Delhi. SC/ST candidates are exempted from this payment. Forms duly completed should reach the ICMR Office on or before **28th Oct., 1987.**

Applications which are incomplete or received after the closing date will be summarily rejected. Canvassing in any form will be a disqualification.

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

P.O. IIT, POWAI, BOMBAY-400076

Advertisement No. C-146/87

Applications on plain paper are invited for the following posts from the citizens of India. Persons employed in Government/Semi-Government Organisations or Educational Institutions must apply through proper channel. Candidates should apply in the prescribed application form which will be sent on request accompanied by a self-addressed envelope (23 cm. x 10 cm.) upto **20th October, 1987.**

Completed application together with requisite copies of certificates, testimonials and Postal Order for Rs. 7.50 as an application fee should be sent to the Registrar on or before **31st October, 1987**. No application fee need be sent by the SC/ST candidates.

Outstation candidates called for interview will be paid single first class (Non A.C.) railway fare from the place of their residence to Bombay and back by the shortest route.

Scale of Pay : (Scales are likely to be revised in near future).

Post No. 1 : Rs. 1200-50-1300-60-1900. (Total emoluments on the minimum of the scale : Rs. 3075/- approx.).

Post No. 2 : Rs. 700-40-1100-50-1600. (Total emoluments on the minimum of the scale : Rs. 2124/- approx.).

1. Deputy Registrar (Academic) (1 post)

Job Description

The Deputy Registrar (Academic) works under the control of the Dean of Academic Programmes and the Registrar. He is responsible for all matters concerning the planning and organisation of examinations, the maintenance of students academic records, award of scholarship, maintenance of Senate records and implementation of Senate decisions, organisation of the annual Convocation etc. The job requires familiarity with academic rules and regulations

Qualifications

(i) A good Bachelor's degree in Arts, Science, Commerce, Engineering or Technology of a recognised University.

(ii) A post-graduate degree or Diploma in any of the above fields or in Public Administration/Management of a recognised Institute/University or its equivalent, or recognised qualifications as Chartered/Cost/SAS Accountant.

Experience

A minimum of 10 years of relevant administrative experience preferably in a Government, Educational or Research Institute or in a Commercial Organisation of a national standing. Out of this, atleast 5 years should be in a responsible position. The candidates would be expected to have some familiarity with academic activities and working procedure in higher educational institutions. In case of necessity, the incumbent may be required to hold additional or exclusive charge of any other area.

Desirable

(i) Teaching and Research experience or experience of life on a residential educational campus.

(ii) Experience of computer systems for information processing and retrieval.

In case of candidates with exceptional qualification the duration of experience may be relaxed suitably.

2. Public Health Officer (1 post)

Job Description

The Public Health Officer would be overall Incharge of all matters pertaining to Campus Sanitation and environment. This includes sewerage and drainage, effective solid waste collection, maintenance of water quality control of mosquitoes, etc.

Qualifications & Experience

(a) M.B.B.S. with Diploma in Public Health,

OR

(b) M. Tech. in Environmental Engineering,

OR

(c) Bachelor's degree in Civil or Sanitary or Public Health Engineering,

OR

(d) Post-graduate degree in Arts, Science, Commerce.

Candidates under (a) and (b) must have a minimum of 3 years of relevant experience in Public Health/Sanitation. Candidates under (c) and (d) must have a minimum of 5 years of relevant experience in Public Health/Sanitation.

Candidate with a Bachelor's degree in Arts, Science, Commerce or Diploma in Civil Engineering or equivalent with a minimum of 8 years of relevant experience may also be considered for appointment in the scale of Rs. 700-1300.

RAGISTRAR

ASSOCIATION OF INDIAN UNIVERSITIES

AIU HOUSE, 16 KOTLA MARG, NEW DELHI-110002

Applications from Indian citizens are invited for the following posts in the prescribed form available on payment of Rs. 2/- from the Office of the Association :

Deputy Secretary : Pay Scale Rs. 3700-5000 (Revised)

Postgraduate with first class or high second class degree with at least ten years experience in an administrative or academic post in University/Government Department/Autonomous Organisation. Knowledge of administrative rules and understanding of issues in university system desirable. Persons with experience of working in Universities/Colleges will be preferred and can be considered for deputation terms.

Senior Cultural Officer : Pay Scale Rs. 3000-4500 (Revised)

Master's degree from a recognised Institution/University. Five years experience with a minimum of two years in youth/organising cultural activities at universities/colleges/other organisations. Incumbent will be responsible for administration of cultural activities at Inter-University/National/International levels. Deputationists from University/Colleges will be preferred.

The posts carry Dearness and other allowances generally at the Central Government rates. Total emoluments at the initial basic pay of Rs. 3700 and Rs. 3000 amount to Rs. 5435 and Rs. 4390 respectively including HRA and Special Allowance. Relaxation in any of the requirements may be made in exceptional cases. The Association reserves the right not to fill up the vacancy advertised, if the circumstances so warrant. SC/ST/Ex-servicemen will be given preference. Canvassing in any form by or on behalf of a candidate will be a disqualification.

Applications complete in all respects should reach the Office by **September 30, 1987**. Persons already in service should apply through proper channel. Applications received after the last date or without complete information may not be entertained.

VIKRAM UNIVERSITY, UJJAIN

Advt. No. Dev/JRF/87-88/2605
Dated : 18/8/1987

Notification

Application on plain paper, containing the information like Name, Postal Address, Date of Birth, Qualification, NET Roll Number and Year & Subject, are invited upto **29-9-1987** for the award of U.G.C. Junior Research Fellowship in Sciences, Humanities (including Social Sciences), Education, Commerce and Law under 'AT ANY ONE GIVEN TIME BASIS' from the successful candidates of National Educational Testing conducted by the University Grants Commission who possess the following qualifications to fill-up 39 (Thirty nine) vacancies of JRFs. The candidates should enclose certified copies of their documents alongwith the application.

Qualifications : High Second Clas Master's degree with a second class Bachelor's degree or atleast a Second Class Master's degree with a First Class— Bachelor's degree. The candidate should be below the age of 30 years (40 years in the case of women candidate). Selected candidates will have to register their names for M.Phil./Ph.D. of this University as per rules. Candidates belonging to SC/ST and Physically handicapped category will have to submit relevant certificates. The selected candidates will be paid fellowship of Rs. 1,000/- p.m. plus contingency as per UGC rules.

No T.A. & D.A. will be paid for attending the interview. Incomplete or applications received after the last date will summarily be rejected.

G.S. Gautam
REGISTRAR

ANNA UNIVERSITY

MADRAS 600 025

Advertisement No. 20620/L3/87
Dated : 2.9.1987

Applications in the prescribed form are invited for the following posts in this University. Application form, details of prescribed qualifications and other particulars can be had from the Registrar, Anna University, Madras-25, on application, accompanied by a crossed Indian Postal Order for Rs. 5/- (Rupees five only) dated not earlier than 30.8.87 drawn in favour of the Registrar, together with a stamped self-addressed envelope (Rs. 2.00) of size 22 x 10 cms.

Details of Posts

1. **Professor** — 3 (Three) (Aeronautical Engineering-1, Management-2) (Scale of Pay : Rs. 1500-60-1800-100-2000- 125/2-2500)
2. **Assistant Professors** — 8 (Eight) (Aeronautical Engineering-1, Automobile Engineering-1, Central Workshop-1, Computer Science-2, Management - 3) (Scale of Pay : Rs. 1200-50-1300-60-1900)
3. **Lecturers** — 7 (Seven) (Automobile Engineering-1, Computer Science-1, Master of Computer Applications-2, Management-3) (Scale of Pay : Rs. 700-40-1100-50-1600)

In addition, D.A., H.R.A. and C.C.A. are admissible at the rates in force from time to time.

Request for application forms, details of qualifications/field of specialisation prescribed and other particulars will be entertained upto 30.9.1987.

Last date for receipt of completed application is **4.10.87**.

Note : Pay scales to the above posts are likely to be revised in due course, based on U.G.C.'s recommendations.

REGISTRAR

UNIVERSITY OF POONA

GANESHKHIND, PUNE-411007

Advertisement No. 40 of 1987

REQUIRES

S. No.	Department		Specialisation
	PROFESSORS (10)		
1.	Physics	1	Energy Studies (State Bank Chair) (Temporary)
2.	-do-	1	Material Science/Laser & Laser's System/Space & upper atmosphere/Theoretical Pysics
3.	Botany	1	Molecular Biology
4.	Microbiology	1	Industrial Microbiology/Environmental Microbiology/ Microbial Genetics
5.	Biotechnology	*1	Biochemical Engineering
6.	Geology	1	Metamorphic Petrology and Structural Geology (Temporary)
7.	Electronic Science	1	Microprocessor/Digital Signal Processing/Semiconductor Technology
8.	English	*1	Literature & Literary Criticism
9.	Centre of Advanced Study in Sanskrit	**1	
10,	Politics	1	

Grade : Rs. 1500-2500 Age Limit : 50 years.

Minimum Qualifications

Eminent scholar with published work of high quality in the subject. Actively engaged in research. About ten years' teaching and/or research experience. Experience of guiding research at doctoral level.

OR

Outstanding scholar with established reputation, having made significant contribution to knowledge.

READERS (19)

11.	Chemistry	1	Biochemistry
12.	-do-	**1	Organic Chemistry

S.No.	Department		Specialisation
13.	Physics	*1	
14.	-do-	1	
15.	Mathematics	1	Number Theory/Graph Theory / Combinatorics/Lattice Theory/Commutative Algebra / Geometry / Functional Analysis / Topology/ Numerical Analysis.
16.	Statistics	*1	Probability / Stochastic Processes/Statistical Inference Operations Research / Biostatistics
17.	Biotechnology	**1	Cell Engineering
18.	Zoology	**1	Experimental insects behaviour/Insect Electroprysiology
19.	Geology	**1	Sedimentology or Ground Water Geology or Remote Sensing or Palaeontology or Geomorphology or Economic Geology
20.	Electronic Science	1	Miroprocesser applications and/or Semiconductor Physics
21.	Computer Science	*1	
22.	-do-	1	(Temporary)
23.	Hindi	1	Modern Prose /Modern Poetry/ Modern Criticism
24.	Modern European Languages	**1	German
25,	Defence Studies	1	
26.	Communication and	1	Reporting, Sub-editing, Feacher writing and magazine Journalism, Communication Research.
27.	Sociology	*1	Sociology of Formal Organisations/Industrial Sociology/ Sociology of Deviance/Sociology of Religion
28.	Programme of Continuing Education/Adult Education/Extension Work	1	(Temporary) (Asstt. Director) for Adult Education
29.	Programme of Continuing Education/Audlt Education/Extension Work	1	(Temporary) (Asstt. Director) for Population Education Resource Centre

Grade : Rs. 1200—1900 Age limit : 45 years

Minimum Qualifications

Good academic record with doctoral degree or equivalent published work. Actively engaged in research or innovation in teaching methods or production of teaching materials. About five years' teaching and/or research experience with minimum three years as Lecturer or equivalent position.

LECTURERS (17)

Sr. No.	Department		Specialisation
30.	Physics	**1	
31.	Mathematics	1	Applied Mathematics/Transform Analysis/Operations Research/Numerical Analysis/Computer Programming/Differential Equations.
32.	Mathematics	*1	Analysis/Graph Theory/ Combinatorics / Algebra/ Number Theory/Geometry/ Topology/
33.	Geography	**1	Climatology
34.	Statistics	*1	Statistical Inference or Probability Theory.
35.	Geology	1	Economic Geology & Minerology (Temporary)
36.	Zoology	*1	Entomology
37.	Zoology	1	Molecular Biology (Biochemistry background)
38.	English		Literature
39.	Hindi	1	Drama and Dramatology (Temporary)
40.	Hindi	1	Medieval Poetry
41.	Modern European Languages	**1	French
42.	Politics	*1	
43.	History	1	Maratha History/Deccan History
44.	Psychology	**1	
45.	Programme of Continuing Education/ Adul. Education/ Extension Work	1	(Temporary) (Project Officer) for Adult Education
46.	-do-	1	(Temporary) (Project Officer) for Population Education Resource Centre

Grade : Rs. 700—1600 Age limit : 35 years

Minimum Qualifications excepting for Lecturer in French and Lecturer in English :

(a) Doctor's Degree or equally high standard research work;

AND

(b) Good academic record with at least Second Class (C in the seven point scale) Master's degree in French.

For developing Interdisciplinary Programmes, degrees in (a) and (b) above in relevant subjects.

Minimum Qualifications for Lecturer in French

(a) A Doctor's degree or research work of an equally high standard; and

(b) Good academic record with at least Second Class (C in the seven point scale) Master's degree from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record may be appointed provided he has done one year post-M.A. diploma course in the teaching of French language from a University on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within eight years from his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Minimum Qualifications for Lecturer in English

(a) A Doctor's degree or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign university.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of a very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years on the condition that he will have to obtain a Doctorate's degree or give evidence or research work of equivalent high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

The posts marked with (*) are reserved for candidates belonging to S.C./S.T./D.T.N.T. However, if such a candidate is not found available/suitable, for a particular post, the suitable candidate from open category may be appointed on purely temporary basis, for a maximum period upto the end of current academic year. The posts market with (**) are reserved only for the candidates belonging to S.C./S.T./D.T.N.T.

Candidates are required to send the application in the prescribed form in eight copies so as to reach the University Office on or before **7th October 1987.** Applications should be sent separately for each post. A set containing eight application forms and accompaniment giving more details of qualifications, experience, etc. for the above posts are available in person for Rs. 10/- in cash or by sending self-addressed envelope (23 cms x 20 cms) stamped for Rs. 4.00 and Postal Order of Rs. 10/- to the Registrar, separately for each post.

V.G. Jagdale
REGISTRAR

INDIAN INSTITUTE OF SCIENCE

BANGALORE 560 012

Requires

Scientific Officer in the Centre for Electronics Design Technology.

Qualifications and Experience :

Essential : ME/MTech in Electronics/Computer Engineering/Electrical Engineering with specialisation in the area of microcomputer systems or its equivalent degree.

Good working familiarity with atleast two of the popular microprocessors both at hardware and software level.

Desirable : Knowledge of real time operating systems for industrial applications. Experience in total electronic product development.

Emoluments : Rs. 2,124-00 p.m. (Approx) in the grade Rs. 700-1300. Grade is likely to have upward revision when IV Pay Commission recommendation becomes effective.

Details and prescribed application forms can be obtained on request accompanied by a crossed postal order for Rs. 5/- (free of cost to SC/ST on production of Caste certificate from a competent authority) drawn in favour of Registrar, Indian Institute of Science alongwith a self-addressed stamped (Rs. 5-40) envelope of the size 28 x 18 cms. **on or before 5th October, 1987.**

R (IA) 308-37/87 **REGISTRAR**

ASSAM AGRICULTURAL UNIVERSITY
JORHAT-13

No. AAU/R/Exam-47-(a) (v)/87-88/2077-2197 **Dated : 27.8.1987.**

ADMISSION NOTICE NO. 1/1987

Applications in prescribed form are invited for admission into the following degree programmes in the different Colleges of the Assam Agricultural University for the Academic Session 1987-88.

(a) B.Sc. (Agri) of 4 years duration	—	(i) College of Agriculture, Assam Agricultural University Jorhat-785 013. (ii) B.N. College of Agriculture, Biswanath Chariali (Male candidates only).
(b) B.V.Sc. & A.H. of 4½ years duration (including six months' internship)	—	(i) College of Veterinary Science, Assam Agricultural University, Khanapara, Guwahati. (ii) College of Veterinary Science, North Lakhimpur (Male candidates only).
(c) B.Sc. (Home-Science) of 3 years duration	—	College of Home-Science, Assam Agricultural University, Jorhat-785 013 (Female candidates only).
(d) B.Sc. (Forestry) of 4 years duration	—	B.N. College of Agriculture, Biswanath Chariali (Male candidate only).
(e) B.F.Sc. of 4 years duration	—	College of Fisheries, Roha, Nagaon (Male candidates only).

1. Minimum Qualification for Admission

(A) B.Sc. (Agri), B.Sc. (Forestry) & B.F.Sc. Degree Programme

(i) A candidate must have passed the 10+2 examination in science group or equivalent examination (s) with physics, chemistry and biology (or botany and zoology in place of biology) of a recognised University or Board or Secondary Education Council.

(ii) A Candidate must have secured minimum 50% marks (45% for SC/ST candidates) in aggregate in the qualifying examination(s).

(iii) A candidate should not be more than 21 years of age on the last date of submission of application.

Candidates working as VLEWs or equivalent in the State of Assam shall also be eligible for admission to the B. Sc. (Agri) degree programme. The entrance qualifications for admission of such VLEW candidates shall be :

(a) passed at least Higher Secondary/PU/PD examination in science group with physics, chemistry and biology (or botany and zoology in place of biology).

(b) maximum age should not exceed 35 (thirty five) years on the last date fixed for receipt of application

(c) should possess at least 3 (three) years practical field experience

(d) must be sponsored by the Director of Agriculture, Assam.

Desirable : Gram Sevak Training passed from any of the Gram Sevak Training Institute of Assam.

B.V.Sc. & A.H. Degree Programme

(i) The requirements are as prescribed under at 1 (A) (i), (ii) & (iii) above.

Candidates working as VFAs or equivalent under the State Govt. of Assam shall also be eligible for admission to the B.V.Sc. & A.H. degree programme subject to fulfilment of the following requirements :

(a) passed at least Higher Secondary/PU/PD examinations in science group with physics, chemistry and biology (or botany and zoology in place of biology) with 45% marks in aggregate

(b) maximum age limit should not exceed 35 (thirty five) years on the last date fixed for receipt of application

(c) should possess at least 3 (three) years practical field experience

(d) must be sponsored by the Director of Animal Husbandry & Veterinary, Govt. of Assam.

Desirable : VFA training passed from the VFA training Institute of Assam.

(C) B.Sc. (Home Science) Degree Programme

(i) A candidate must have passed the 10+2 examination in science group or equivalent examination (s) with physics, chemistry and biology (or botany and zoology in place of biology) of a recognised University or Board or Secondary Education Council.

(ii) Candidate must have secured at least 40% marks (pass 10+2 for SC/ST candidates) in aggregate in the qualifying examination (s).

(iii) A candidate should not be more than 21 years of age on the last date of submission of application.

Note

Candidates passing in supplementary or compartmental examinations under (A), (B) & (C) above shall not be eligible for admission.

2. Specialised Course in Tea Husbandry & Technology

In the B.Sc. (Agri) degree programme, 20 seats are earmarked for specialised course in Tea Husbandry & Technology, out of which 7 seats are reserved for candidates sponsored by the tea-growing States/Union Territories of India (other than Assam) or nominees of the ICAR.

3. Reservation of Seats

Reservation of seats for certain categories of candidates besides those of SC/ST/OBC & MOBC will be made in accordance with the principles laid down by the University authority. Candidates against the reserved seats should submit necessary certificates in support of their claim, issued by each of the concerning Registered Organisations, viz., All Assam Tribal Sangha, Assam Scheduled Caste Development Council (Assam Anususita Jati Unnyan Parishad, All Assam Other Backward Classes' Associations either at the State or District level, in the prescribed forms and duly countersigned by the Deputy Commissioner/Sub-Divisional Officer of the District/Sub-Division.

4. How to Apply

Application forms for admission into different degree programmes are obtainable either personally or by sending self addressed stamped (Rs. 2.00) envelope of size 10 x 23 cm. and on payment of Rs. 3.00 (Rupees three) only in the form of Crossed IPO/Bank payable to :

1. The Dean, Faculty of Agriculture, Assam Agricultural University, Jorhat-13 for B.Sc. (Agri) & B.Sc. (Forestry) Programme.
2. The Dean, Faculty of Veterinary Science, Assam Agricultural University, Khanapara, Guwahati-22 for B.V.Sc. & A.H. Programme.
3. The Dean, Faculty of Home Science, Assam Agricultural University, Jorhat-13 for B.Sc. (Home Science) Programme.
4. OSD, College of Fisheries, Raha, Nagaon for B.F.Sc. Programme.

In addition to above, limited no. of application forms for all programmes are also available on payment of necessary fees from Jorhat and Khanapara Campus of the University.

VLEW candidates are to apply through the Director of Agriculture, Govt. of Assam.

VFA candidates are to apply through the Director of Animal Husbandry & Veterinary, Govt. of Assam.

Candidates from Nagaland, Manipur, Arunachal Pradesh, Mizoram, Meghalaya and Tripura who are Govt. nominees should submit their applications through respective Govts. and their Govts. should channelise such applications through the North Eastern Council, Shillong to the respective Deans of the concerned faculties of the University where the admission is sought.

Applications complete in all respects must be sent to :

(i) The Dean, Faculty of Agriculture, Assam Agricultural University, Jorhat-785 013 for admission into the B.Sc. (Agri) and B.Sc. (Forestry) degree programme.

(ii) The Dean, Faculty of Veterinary Science, Assam Agricultural University, Khanapara, Guwahati-781 022 for admission into the B.V.Sc. & A.H. degree programme.

(iii) The Dean, Faculty of Home Science, Assam Agricultural University, Jorhat-785 013 for admission into the B.Sc. (Home Science) degree programme; and

(iv) The O.S.D., College of Fisheries, Raha-782103, Nagaon for admission into B.F.Sc. degree programme.

So as to reach them positively on or before **10th Oct. '87.**

J.N. Talukdar
REGISTRAR

SRI KRISHNADEVARAYA UNIVERSITY

ANANTAPUR

Achievements and Plans

Sri Krishnadevaraya University which came into being on 27-7-1981 has a long tradition of teaching and research work dating back to 1968, when it first began as P.G. Centre of S.V. University with 5 departments became an autonomous Post-Graduate Centre in the year 1976. Over these years, the nucleus of 5 departments has extended into a structure of 22 departments.

The University offers courses leading to M.A. in English, Telugu, Economics, History, Sociology, Rural Development and Political Science; M.Sc. in Mathematics, Physics, Chemistry, Statistics, Polymer Sciences, Botany, Zoology, Bio-Chemistry, Microbiology and Geography; M.Com., M.B.A., M.L., B.L.I.Sc., B.G.L/B.L. In addition, P.G. Diploma in Instrumentation, Diploma in Labour Law and Taxation, Certificate Courses in Tamil, Kannada and Sanskrit are also being offered. The University proposes to start P.G. Courses in Instrumentation, Diploma in Computer applications to meet the demands of Scientific and technical challenges and opportunities in the coming years.

Building Programme

The University has recently acquired about 250 acres of land and the University has 500 acres campu for educational institutions and residential quarters.

During VI Plan period, the University, with liberal financial assistance from the University Grants Commission and State Government, could complete one Science Block, one Hostel for boys and one for girl students, Indoor Gymnasium, N.R.S.C. building, Guest-house-cum-Faculty Club, Green House for Bio-Sciences Department and Health Centre in a record time of one year. The work for construction of 24 Staff quarters are under active progress. The U.G.C. has also approved proposals of the University under VII Plan period, the plans and estimates for the following programme have since been approved.

1.	Construction of Academic Building for M.B.A. Programme	Rs. 20.00 lakhs
2.	Construction of Hostel for 60 students under M.B.A. Programme	Rs. 17.00 lakhs
3.	Construction of 14 Nos. of Staff quarters under M.B.A. Programme	Rs. 20.35 lakhs
4.	Construction of 21 Nos. Staff quarters outside Plan allocation	Rs. 20.00 lakhs

In addition, the U.G.C. has considered the University's proposals on Adult Education Programme, Museum and Archives.

All India Board of Management Studies has approved our M.B.A. course. This is a boon to the University and with the liberal assistance of U.G.C. to strengthen the M.B.A. programme by granting additional staff, Library, Equipment, academic and Hostel buildings for students and quarters for Staff. This will enable the University to establish Institute for Management and Development Studies.

Training and Research Programme

The research activities in various departments by the staff and research scholars are progressing with usual stiffness. Almost all departments are working on Research Projects sponsored by U.G.C., C.S.I.R., I.C.M.R, I.C.S.S.R. and other organisations. About 300 research scholars in various disciplines are carrying on research leading to M. Phil and Ph. D. courses.

Affiliation

The University Act has been suitably amended to affiliate all Colleges located in two districts of Anantapur and Kurnool from the academic year 1987-88. With this, the University attained its status of fulfledged affiliating University.

Future Plans

With the establishment of a Computer Centre the University proposes to start D.C.A. courses with the financial assistance of U.G.C. and State Government. It is also proposed to start P.G. Courses in Instrumentation shortly.

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg,
New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by [illegible] Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157

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ONDAY, SEPTEMBER 28, 1987 Rs. 1.50

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*Attach self-attested photocopies of mark-sheets/certificates/testimonials.

UNIVERSITY NEWS

VOL. XXV SEPTEMBER 28
No. 39 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor:
SUTINDER SINGH

Information Technology And Development Process

D.C. Surana*

Information and Development

Development in the various manifestations has become a process to bring about change of all sorts in an individual, group or society, be it economical or political, social or cultural, scientific or technological, industrial or agricultural, through human efforts, material resources and information processing. The change generates advanced information and advanced information sets pace for further development. Thus both development and information follow each other closely creating an unending spiralling effect despite the fact that zero growth for development and information has been forecast by Delphi techniques. But this prediction does not seem to be insight or even anywhere near the plateau at this point of time. There is an all round urge for more information as it is a vital input in the cause of development to achieve the desired effects. The benefits of development processes need to be disseminated as information through mass media for equitable distribution, for development after all is for the people and by the people. The process of development outputs information and is therefore not only in input but is also an output of a development process.

Information as Input to Development Process

The information needs to be collected in time, stored and be retrievable without delays and hassels. The information must be communicated efficiently, economically, instantly and accurately to enable its application to the development processes. Automation of information is the answer to achieve this of the three inputs in development process viz. human efforts, material resources and information, the first two played a dominant role till the turn of the 19th century as the information available till that point of time was not sizeable enough or significant to be acclaimed as an input. Since then there has been tremendous strides in knowledge and consequent accumulation of information. This in turn accelerated the development processes i.e. from the travelling speeds of few tens of km/hr. in 19th century the speeds of a few hundreds of kms/hr. were attained somewhere in the middle of the 20th century. There has been all-round increase in productivity and improvement in products. This was the beginning of production era and consequent all round accumulation of information. So much so that after the World War II the rate of acceleration in information growth increased exponentially. It is said that the sum total of all information since the inception of the world till about the II World War is far less than the information generated during the period afterwards. This led to further developments at a greater pace resulting into speeds approaching the velocity of light.

With such fantastic growth in scientific knowledge, information has a dominant role to play in the development processes to an extent that today it is a parameter of paramount importance. To some it is a

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Head of the Department of Electronics & Comm. Engg. & Head, Audio-Visual Research Centre, University of Jodhpur, Jodhpur-342 001.

hallmark of maturity in the development processes or in other words the development has come of age after centuries of infancy.

It is quite evident that the future developments rest largely on a data-base created on account of more than geometric growth of information in every field of human activity. Application of available information gives birth to development plans, speeds up their implementation and at the end generates new information.

The three stages in the development are, on the pre-development stage which projects future trends on the basis of available information which sets the course for development plans. During the currency of the development, newer experiences give rise to additional information which gets accumulated. Finally during the post development period, its analysis which helps to draw conclusions and aids the future course of action and events. This facet of information acts as an input to the development process and is a parameter in the process of development, such as, agricultural, industrial, medical, educational, scientific, researches and the like. The large information inputs to the process of development provide new dimension and directions. With this trend the world is moving from production society to information society—a trend in which information is gradually becoming the life thread of society.

The Information Sector

What is informanion ? According to one view it is transfer of facts and intelligible data while the other view regards it as fundamental like matter and energy which is all pervading. Some think that information is knowledge and knowledge is information. However, information is conceivably akin to knowledge and has close affinity and liaison with it. It is an indispensable, irreplaceable linkage between the intellect and physical world.

The information technology envelops all activities starting from the capturing, gathering and collection to storing, processing and retrieving and finally communicating transferring and displaying the knowledge to the growth development and application centres. In the past all these activities were carried out manually. The advent of appropriate transducers and computer systems have facilitated straight capturing and processing of information. The rapid growth in the telecommunication technologies has provided efficient means of communicating it to places far or near. Finally, the instruments, display devices, including mass media, have facilitated its dissemination. Altogether they provide all essential ingredients for automation in information handling. All this hardware together with the corresponding software is information technology or informatics as it is called now. The economists call it the information sector like any other sector of economy and has become one of the important sectors of development, one may call it information industry.

Conclusion

Information inputs to development processes together with information technologies is bringing about a revolution in developed countries and its impact is being felt in the developing and third world countries as well. It is estimated that nearly half of the working population in industrialized countries is employed in information industry with a turn over of more than 100 billion dollars accounting for 50% of the total GNP. The total share of this industry is well below 10% in the third world countries with research component of the order of 3 to 4% of the total.

According to Mahdi Elmandjra no country can ill afford not to join the information revolution or resist its invasion even though it may disrupt the development patterns and upset the socio-cultural environment. The choice, therefore, is to actively participate in it and modify the inputs, strategies and models of development.

It so happens that in the third world countries while information sector is taking some shape, the corresponding information inputs are not fully exploited. Both information as input and information technology would have to grow hand in hand. The input aspect would give a boost to the information sector and account for progressive development for the total growth of information technology. This is bringing in the information revolution.

The information revolution would make the society less dependent on natural resources. The emphasis in human resources would shift from productivity to its ultimate potentialities. Information society would have a new social order giving rise to new ethical, political, legal and economic problems. The new systems would have to be evolved.

All this and more would happen and shall have to be tackled as according to club of Rome, "The challenging problems of the 21st century cannot be tackled with the institutions of the 18th century, mental structures and conceptual tools of the 19th century." □

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Restructuring Engineering Curriculum

S. D. Sane*

Engineering is the application of science and technology to meet human needs. In the past, it was difficult to separate science from Engineering. Scientists investigate law of nature and their efforts are aimed at basic research. However, efforts of engineers are directed more at the application than the discovery of these principles. Hence the engineer must possess a thorough foundation in basic sciences and mathematics, in addition to the study of engineering sciences. With rapid growth of science and technology, engineering is gradually compartmentalized into various branches. Today a variety of more specialized fields have developed e.g. Chemical engineering, Electronic engineering, Nuclear engineering, etc. Therefore, the engineering curriculum must provide a broad-based education appropriate to this world of change. It must provide the engineer scientific knowledge as also develop his intellectual skill. The engineering curriculum should have the foundation of science and mathematics with a sequence of other engineering subjects. The engineering curriculum should, therefore consist of science, mathematics, humanities, and management subjects. However, in this article the aim is to focus attention upon science and mathematics.

Mathematics is the language of engineering analysis. Mathematics is useful in providing compactness and accuracy of expression. Mathematical rules also help in building a logical approach for solutions of problems. Mathematics provides quantitative basis for engineering analysis, computation and also helps in understanding clearly the engineering phenomena.

Other important tool in the solution of engineering problems, is the knowledge of basic sciences. In many cases concepts from basic sciences such as physics and chemistry can be applied directly in engineering practice. Many, so called engineering subjects, such as, fluid mechanics, applied mechanics, thermodynamics, electrical science, electronics etc. have strong roots in basic science. Specialization in engineering is actually related with a particular branch of science, for example chemical engineers are associated with chemistry, mechanical engineers with mechanics and thermodynamics, electrical engineers with electricity and magnetism, etc. However, all engineers need a broad foundation in these fundamental sciences such as physics, chemistry, material science. With rapid growth of technology there is a demand for new engineering materials for specialised purposes. By considering the physical and chemical properties of material, the engineer should be able to select a proper material. From this point of view experimental knowledge is also useful.

Experimental Work

Experimental work is the planned observational process by which one develops the habit of planning, analysis and interpretation of observed facts. This combination of thinking and experimentation is commonly called the scientific method. Experimental work in science is helpful from following points of view :

(i) Useful to improve understanding of the subject and aquire familarity with the subject ;

(ii) Experimental work is useful in acquiring the habit of careful recording, documentation and analysis ;

(iii) It is useful in improving measurement skill and accuracy ;

(iv) Errors arising in the regular pattern due to uncontrolled variables can be identified ;

(v) All such knowledge is useful in testing and quality control.

Therefore, in the curriculum of engineering, experimental work in science should be incorporated. Experimental work is particularly useful in developing analytical thinking and scientific integrity.

Mathematical Analysis

Mathematics provides a logical framework for engineering problem solving. Of course, most engineers are required to apply only a small fraction of mathematical concepts in their professional practice Hence many a times complaints are heard about the 'excessive' stress placed on mathematics, from engineering students or practicing engineers. However, an engineer becomes functionally illiterate without sound knowledge of mathematics. It is useful in coummunicating the ideas in coherent fashion and also in understanding the activities. Mastery of mathematics and science distinguishes the engineer from the technician.

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*Department of Chemistry, Government College of Engineering, Aurangabad.

Engineering students typically begin their studies with a background in algebra, geometry and trigonometry. Mathematics curriculum of engineering course should include subjects like analytical geometry, functional analysis, vector analysis, numerical methods, probability and statistics.

A key step in the mathematical analysis is in terms of equations. Mathematical equations are essentially just a symbolic representation or model of the physical laws known to govern a particular process. Mathematical logic is useful directly to determine the quantities of interest and information about the system. Of course it is necessary to derive the appropriate equation for a particular problem.

Physics

The new engineering of next few years will be in part the application of physics. Knowledge of topics such as relativity, mechanics, solid state physics, basic electronics, nuclear physics is of common interest. Engineering is most frequently thought as a macroscopic science concerned with gross behaviour of materials and processes. The engineer should have an understanding and appreciation of the advances in the knowledge of processes occurring on the microscopic level of atoms and nuclei. This will help in understanding the structure and properties of materials.

Knowledge of optics, acoustics, lasers, masers, ultrasonics is also useful in various branches of engineering. Optical methods of precision measurement based on phenomenon of interference is having wide range of application in the engineering field. These precision methods are useful to the order of 10^{-10} meters. Polarization and refractive index measurements are also useful for liquids and solids. Phenomenon of photoelasticity is useful for the stress analysis in girders or beams. Ultrasonic methods also prove to be essential in material testing.

Knowledge of basic electronics, nuclear physics and lasers can be imparted in all branches of engineering under the subject Applied Physics. Considering these aspects it is necessary to restructure the contents of physics and also to introduce some relevant experimental work.

Chemistry

The selection of proper metal, alloy, polymer, oil or rubber for a particular job can be made by considering the chemical properties. Therefore an engineer should know the general principles on which behaviour of materials is dependent. The knowledge of chemical bonding, solid state chemistry, electrochemistry, energetics, chemical kinetics, polymer chemistry, etc., is quite essential.

Solid state chemistry, chemical bonding and phase equilibrium are useful for better understanding of material science. Knowledge of electrochemistry and corrosion is helpful in selecting a proper material for specified conditions. It is important for the engineer to acquire familiarity with major types of engineering materials and the methods used to determine and characterize the properties of those materials. If proper materials are not selected with reference to the environment, the life of the structure is shortened. This has been proved by the recent example of Thana Crick Bridge.

Therefore, knowledge of composition, structure

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and properties of metals, alloys, ceramics, polymeric materials and composite materials is necessary. Study of chemistry is also desirable in the area of pollution and pollution control, water treatment and sewage disposal and processes like electroplating.

Experimental work in corrosion, corrosion control, pH determination will be of practical importance. Experiments on water analysis, conductometry, testing of lubricants will also be helpful in selecting the materials.

Present Position

In Maharashtra State, the Engineering Colleges are affiliated to six different universities. There is a large diversity in the contents of science subjects in the curriculum of engineering. Present position in respect of these subjects (with reference to Civil, Mechanical and Electrical Courses) is summarized in Table 1.

It has been also experienced that during every revision of syllabus, efforts are purposely made to curtail the contents of science subjects. Such retrograde revision lacks any logical or academic reasoning. Hence the present situation in respect of these subjects is quite unhappy.

It may be pointed out that in the curriculum of engineering offered by Poona University there is no place for the subject Chemistry. The oldest engineering college of this State (Govt. Engineering College, Poona) is without Physics and Chemistry Laboratories. Perhaps this may be the unique example in our country, where the theoretical or practical knowledge of science subjects is neglected to such an extent. This situation has come about due to whims and fancies of some higher authorities in the past and now nobody is interested in improving it.

Science subjects are given proper importance at all Indian Institutes of Technology (IITs) and their science laboratories are well-equipped. All India Council of Technical Education (A.I.C.T.E.) have also given certain guidelines for restructuring the syllabi, but the so called 'Technical Academicians' turn a deaf ear. During academic discussions or seminars, there is a lot of tall talk about inter-disciplinary approach of inter-faculty mixing. However in practice, efforts are made to compartmentalise science from engineering.

Need for Change

In view of the foregoing, it is necessary to restructure the curriculum of engineering at all universities. It is academically desirable to place proper emphasis on contents of science and mathematics. Considering guidelines of different expert committees, needs of the profession and the advancement in science, it is only proper to modify the curriculum. Development of physics and chemistry laboratories is also essential. Experimental work in these subjects needs to be changed. New material testing methods can be included in exprimental work.

It is particularly necessary to have uniformity in the contents of these subjects in the curriculum at different universities. Such matters can be best decided at the joint council of Vice-Chancellors in the state. Similarly, AICTE should also assert that proper weightage is given to these subjects in the curriculum.

TABLE—1

	University/Institute						
Subject	Marathwada	Bombay	I.I.T.	Shivaji	Nagpur/ Amravati	A.I.C.T.E. Recommendation	Poona University
Physics Theory	Taught to I & II semester Theory paper of 50 marks	Theory paper of 75 marks at I & II semester	Theory paper of 100 marks at Ist year	Theory paper of 100 marks at II semester	Theory paper of 100 marks for Ist year	100 Marks	100 Marks
Practical	Term work 25 marks	Term Work 25 marks	50 marks	Term work of 25 marks	Examination of 50 marks	50 Marks	NIL
Chemistry Theory	Taught to I & II semester Theory paper of 50 Marks	Theory paper of 75 marks at I & II semester	Theory paper 100 marks	Theory paper of 100 marks at Ist semester	Theory paper of 100 marks at Ist year	100 Marks	NIL
Practical	Term work of 25 marks	Term work of 25 marks	50 Marks	Term work of 25 marks	Examination of 50 marks	50 Marks	NIL

The Under-Performance Syndrome

Umrao Singh Chaudhari*

For the last two-three years a recurrent theme of Dr. Amrik Singh's articles has been teachears' under-performance. He has gone to the extent of saying that teachers of universities and colleges get "full salary for half work". This observation is not wholly devoid of substance, yet majority of the teachers have reacted to it very sharply. They say that singling out teaching profession for underperformance, is an attempt to scandalize and malign teachers in the eyes of larger public. I also feel the situation is not as much hopeless and sombre as has been painted either by Prof. Gangrade or by Prof. Singh. I found my viewpoint endorsed in a very recent letter from Cambridge, written by Parvez Dewan, in the *Hindustan Times, Sunday Magazine* (August 30, 1987). He has to say that "our academics, no, not Indians working in the West, but Indians still working in JNU or Orissa or elsewhere, are doing such good work, especially in the social sciences I have been studying at Cambridge (economics, political science and sociology), that today India is to academic research what the NICs are to consumer goods. And not just in terms of the number of academic papers published. If almost 80 per cent of all consumer goods sold in Western supermarkets have been made in East Asia, at least 50 per cent of all papers referred to by the students of my course were written by Indians still working in India".

It is always thought good for the academic health of the country to occasionally bring in to open and dissect teachers' performance and achievement. But, ringing the bell of under-performance and non-performance incessantly into the ears of the public would ultimately generate a feeling of cynicism, diffidence and worthlessness in the teachers. This type of cursing and condemning approach not only demoralizes the teaching community, but brings the whole system of education and its auxiliary agencies into great disrepute.

Conditions and Causes

The purpose of writing this article is not to defend under-performance but to highlight those conditions and causes which impinge upon the teachers to gradually render them dull, insensitive and unaspiring, and finally to paralyse their capacity and urge to perform.

Performance is not an independent variable. It is not always within the control of an individual to perform according to his wishes or according to theoretical prescription. What matters most is the reality in which a worker is enveloped in the work situation. Performance is directly proportional to the situation, context and climate of the institution or organization. Researches have shown that monotonws and uninspiring context has a retarding influence on performance and achievement. Poor conditions of work and lack of facilities contribute to underperformance. Closed and direct organizational climate stifles initiative, spontaneity and innovativeness.

Political Patronage

Let us now try to critically examine the scenario of our educational institutions. It is no exaggeration that 4o per cent of 5600 colleges are economically unviable. Many of them are owned by the politicians who oblige the party in power at the time of election. Universities are also opened, under political pressure, without obtaining prior sanction or approval from the UGC, and without even meeting the minimum requirements. Such institutions which are opened to serve political ends, hardly bother to abide by the laid down academic norms, for years, and thus conduce to lowing of standards. In such institutions teachers' under-performance is inevitable. So, the most potent and cogent factor responsible for under-performance by the teachers is the political patronage. Would the party in power come forward to stop providing political parenthood and patronage to persons and institutions, at least in matters of education?

Aptitude and Attitude

In most of the cases performance and accountability depend upon the type of the people recruited to the profession. Somebody has beautifully said that teaching resembles gardening except for the propensity to lecture to the roses. We really need to recruit teachers who possess the warmth and affection to make the roses bloom. Unfortunately, these days, experts who sit on the selection committees give too much weightage to research degree and publications, and they rarely bother for the attitude and inclination of the candidate towards teaching. In fact, teaching is not as much a matter of scholarship and research as it is of aptitude and attitude. Research bears the same relationship with teaching as bull fight with agricultural skills. Simply passing a test on morality would not make one a moral person. In the same way, getting through a national entrance test for teaching would rarely make a 55% postgraduate an effective and worthy teacher. Hence, a balance has to be struck between cognitive and affective demands of teaching at the time of recruitment.

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* *Reader, Department of Education, Devi Ahilya Vishwavidyalaya, Indore.*

Organisational Climate

The organizational climate of university departments and colleges is greatly responsible for the under-performance by the teachers. Our colleges and universities are 'over-administered' and 'underled'. The organizational (or institutional) climate obtaining in most of the institutions is closed and direct (or autocratic). The reward structure, inside and outside the institutions, also militates against the genuine, silent and self-respecting teachers. Careerism is so rampant that, in order to climb up the ladder, many of the teachers are seen prepared to get exploited by the head or the principal, at the earliest opportunity. They can be seen writing papers and books for the personal gain of the head or the principal. This has been highlighted on TV, symbolically in Prof. Verma—Mrs, Pathak's episode of guide-writing in the serial **Chunauti**. Instead of regarding the institutions as a 'cooperative commonwealth' of all the employees, the head or the principal treats it as his/her '**Jageer**'. As a result, sychophants and satellites mushsoom, the tide of mediocrity rises, creativity gets stifled and pursuit of excellence takes a back seat. The management also plays the role of a villain in the high drama of educational floundering.

A teacher cannot remain unaffected by the utilitarian and pragmatic milieu of the larger society. Like doctors and engineers, he also hankers after money and standards of living. Like the members of other occupations and professions, the teacher has also become partially blind to social commitment, values and ideals. Bureaucratization and industrialization have further reduced teachers to 'mechanical roles'. They find themselves just an extension of the input-output process of the system of education. This technotronic (or impersonal) approach to education has developed a sense of alienation in the teachers. The act of teaching, therefore, remains no more a source of joy, or a medium of self-expression.

Opposing Propensities

The human being is ordained with two opposing propensities: the urge to create, and the urge to destroy. Men also possess the tendency to shirk and dodge as well as the capacity to work hard and excel. Human beings do not like to stay simply as creatures of God. They frequently strive to be creators. But, when the urge to create and excel is thwarted, urge to destroy comes into play. Hence, it is the major responsibility of the educational administrators and leaders to create such conditions and contexts which stimulate and inspire teachers to perform qualitatively better and higher. ☐

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National Conference on Role of Universities in Implementation of New Education Policy

The Association of Indian Universities will organise, in collaboration with Osmania University, a National Conference on Role of Universities in Implementation of New Education Policy on December 18 & 19, 1987 at Hyderabad.

The **New Education Policy** (NEP) visualises the role of higher education as providing people with an opportunity to reflect on the critical social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills.

The role of universities is crucial in the matter since one of the important functions of universities and institutes of higher learning is to provide specialized scientific and technical skills, imparting of knowledge, contributing to every sector of national development and improving social conduct and behaviour. Thus, a major share of responsibilities, as envisaged in the NEP, rests with the universities and other educational institutions. It becomes imperative for the educational community to try to define some of the important issues involved in the management of higher education, the efficiency improvement, the financing of higher education, youth services and physical fitness programmes, education in human values, etc. in the light of the NEP recommendations.

The deliberations of the conference will focus on the following topics :

I. **Management of Higher Education**
   * Consolidation and Expansion of Institutions
   * Autonomous Colleges and Departments
   * National Apex Body and State Councils of Higher Education

II. **Improvement in Efficiency**
   * Teachers Training
   * Restructuring of Courses
   * Research and Extension
   * Evaluation and Examinations

III. **New Strategies in Higher Education**
   * Evaluation and Accreditation of Institutions
   * Youth Services, Sports and Physical Fitness Programmes
   * Distance Teaching/Learning
   * National Testing Service
   * Rural Universities
   * Education in Human Values

PROGRAMME

December 18, 1987 (Friday)

10.00 A.M.	INAUGURATION
11.30 to 1.00	SESSION I
2.00 to 4.30	SESSION II

December 19, 1987 (Saturday)

9.00 to 11.30 A.M.	SESSION III
12.00 to 1.30	SESSION IV
2.30 to 4.30	SESSION V (Plenary)

Participation

The participation to the conference can be either in the form of presentation of a paper or through discussion. The participation to the conference is open to individuals belonging to universities, research institutions, Govt. and non-Govt. organisations involved in planning and development of higher education.

Registration Fee

Each delegate is required to pay a non-refundable registration fee of Rs. 400 through a bank draft in favour of the Secretary, Association of Indian Universities, New Delhi. The fee includes accommodation conference papers and meals during the conference dates, December 18 & 19, 1987.

Last date for receipt of registration fee alongwith registration form (to be filled in duplicate)si **October 15, 1987.**

Venue

The venue of the conference is Osmania University Hyderabad, A.P.

Language

The official language of the conference will be English.

Receipt of Papers

The papers (Typewritten and in duplicate) should reach the Convenor not later than **October 15, 1987**.

Convenor

Dr. V. Natarajan
Project Director (Exams.)
Association of Indian Universities
AIU House, 16 Kotla Marg
New Delhi 110 002.
Telephone : 3310059
Telex : 31-5578 AIU IN
Telegram : 'ASINDU'

Seminar on Medical Education

The University of Health Sciences, Vijayawada, recently organised a two-day Seminar on Medical Education. Dr. K. N. Rao, Vice-Chancellor of the University and the Chief Resource Person inaugurated the Seminar. About 35 participants including Principals, Professors of all the Medical Colleges and Dental Colleges in the State participated. 7 Resource Persons pertaining to different specialities directed the deliberations.

Following are the main recommendations made at the Seminar :

Aims of Medical Education

In view of the social change, International Health Policy and the National Health Policy, the Structure, Content, and Attitude of Medical Education must change. The Medical Education must meet the needs of the Society and tackle common diseases prevalent in the State in particular and the country in general. It is also necessary to establish the exact pattern of diseases specially in Rural and Tribal areas.

Rome Scheme

Reorientation of Medical Education (ROME) Scheme although one decade old nothing has been achieved so far in implementation. Many a difficulty is faced in the implementation of this scheme. There are many administrative, technical and operational difficulties. There is also a lack of motivation on the part of Medical Personnel. The Medical Council of India has made ROME Scheme mandatory and hence those colleges that are not implementing this scheme will run the risk of derecognition.

Curriculum Planning

In view of the motto of World Health Organisation "HEALTH FOR ALL BY 2000 A. D.", a comprehensive and integrated approach to Medical Education is needed. It is decided to have an effective and thorough coverage of Primary Health care. The total period of 4½ years M. B. B. S. course is divided into 1½ years periods. The University of Health Sciences will have a uniform syllabus and examination pattern for all the Medical Colleges in the State.

Teaching Methods and Aids

It is high time the teachers gave up the emphasis on didactic methods of teaching. The entire teaching must be reoriented keeping the needs of the patient and the medical student in view. Modern methods of teaching such as group discussions, seminars, role played, etc. must be introduced. Teaching aids such as Slide Projectors, Over Head Projectors, Charts, etc., must be used.

Evaluation

The methodology must include evaluation of intelligent skills, practical skills and communicative skills. There must be formative and summative evaluation. The student must be continuously evaluated in addition to the terminal examination. It was recommended to introduce short answer questions, modified essay questions, multiple choice questions, modified clinical examination, simulated patient management, properly planned oral examinations, etc. It was also proposed that the University should develop a Question Bank.

Physician's Profile

The ideal product that should be brought out from the Portals of the Medical Institutions besides the basic Doctor should be evaluated at the Psychological level for integrity, understanding compassion and attending skillfully to any emergency be in a rural or urban environment. The Medical Doctor must have a competent head and a compassionate heart. A Doctor must do to the patient all that he expects from a Doctor when he becomes a patient. A good Physician should be intelligent and trust worthy. Continuing Medical Educotion should not be lost sight of as every one has to be a student throughout his life and keep abreast of the modern advancement.

Social Sciences in Medical Education

Medicine is a Social Science. It is meant for the people. It is relevant to other social sciences like Sociology, Anthropology, Psychology, Economics, History, etc., some members expressed the view that these subjects must be taught by Professors of Social and Preventive Medicine. A Section of the members expressed the view that these subjects should be taught by the Social Scientists. Social Sciences are gaining more and more importance in Medical Education with the changing needs of the Society.

An evaluation test was administered on all the particiants to express their free and frank opinions on the various aspects of the Seminar.

NSS National Seminar

The Patna University will host a National Seminar of the Programme Coordinators, NSS and some key personnels of NSS to evaluate NSS programmes and field work on October 31, 1987. The seminar will provide an opportunity to exchange enriched experiences to identify the problems and to find out their solutions through absorbing discussions.

Sponsored by the Department of Youth Affairs & Sports of the Ministry of Human Resource Development, the seminar will focus discussion on (i) Role of NSS volunteers in promoting Rural Development; (ii) Role of NSS in mobilising youths for National Integration and secularism; (iii) Field work—Problems and achievement; (iv) National Youth Policy and effective programmes for youths; and (v) NSS organisation, structure and accountability.

UGC Assistance for Cochin University

The University Grants Commission (UGC) has sanctioned a special assistance of Rs. 70.94 lakhs to the Cochin University of Science and Technology for the development of Engineering and Technology departments during the VII Plan period. This is in addition to Rs. 1 crore sanctioned earlier for the general development of the University.

German Varsity Honours Prof. Murty

The Halle-Wittenberg University of Berlin (GDR) has conferred an Honorary Doctoral Degree on Prof. K. Satchidananda Murty, Vice-Chairman of the University Grants Commission for his outstanding contribution in the field of Indian Philosophy.

Prof. Murty was in G.D.R. recently as the leader of U.G.C. Educational Delegation which visited the universities and technological institutions in that country. The purpose of this visit was to review the progress made in the fields of existing bilateral collaborations and to identify further possibilities of cooperation in new areas.

Before returning to India Prof. Murty will visit some other East European countries like Poland, Czechoslovakia, Hungary and Bulgaria for discussions with the officials of Governments and Universities.

Third University Contingent Returns from USSR

The third and final contingent of 160 youth, including 42 university youth, returned from Tashkent on September 18, 1987 after participating in the Festival of India in USSR. The Festival of India in USSR and the ensuing Festival of USSR in India have been dedicated to the 40th anniversary of Indian Independence and 70th anniversary of the Great October Socialist Revolution.

At Tashkent the Festival was inaugurated by Smt. Krishna Sahi, minister of State for Edn. and Culture on September 4, 1987, The university youth presented a gala performance. After the inaugural ceremony, the youth visited farms, industrial enterprises, schools and colleges on September 5, and then dispersed in three batches for Bukhara, Samarkand, Urgench, Chardzou, Mary, Askhabad, Andizhan, Ferghana, Kokand, etc.

The youth were warmly received by the Soviet people at each place with the traditional Bread and Salt welcome ceremony.

The Chowila Folk Dancers of Bombay University stole the show with their colourful costumes and smiling faces. This dance is from Kumaon Hills of Utter Pradesh and is performed on the occasion

ASSOCIATION OF INDIAN UNIVERSITIES

NOTIFICATION

It has come to the notice of the Association of Indian Universities that several advertisements have appeared in the newspapers in the name of NEWPORT UNIVERSITY, CALIFORNIA, USA for MBA, BBA and other degree courses to be conducted by some private institutions in India. All concerned are informed through this announcement that the so called Newport University, California, USA, is NOT an **accredited institution** in USA; the question of its recognition in India, therefore, does not arise. The notification is issued in the interest of all those who have been attracted by the claims about the aforesaid Institution as advertised in the newspapers.

Students, Teachers, University administrators and others are welcome to seek information on the status of any university from Deputy Secretary (Evaluation), Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002.

of Vijaya Dashmi. Similarly, the Badhai Folk Dance, performed by the students of Dr. H.S. Gour Vishwavidyalaya, Sagar, proved a big hit. This is a typical folk dance of Bundelkhand region expressing the hilarious attitude of people.

The team from Dayalbagh Educational Institute, Agra, fascinated the audience with their melodious group songs, rendered in commemoration of the motherland—the land of our birth, ancestor, music and destiny.

The young grand master, Nikhil Bidwalkar, took the crowd by storm wherever he performed on Santoor, ably assisted by Yashwant Sharma on the tabla. This young duo of Jodhpur University lured the audience with classical ragas for long hours. Santoor is a fascinating Kashmiri folk instrument of hundred strings, which is played in Central Asia also.

Following university participants comprised the Third Group:

Badhai Folk Dance (Dr. Hari Singh Gour Vishwavidyalaya, Sagar) : Usha Raj, Anupma Dube, Deep Shikha Tamrakar, Sapna Modi, Ajay Gupta, Sudhir Tiwari, Madan Nanda, Deepa Pande, Krishan Lal, Sanjay Jadia, Moorat Singh, Chandra Kumar, Devi Prasad and Shri V.N. Pathak (official).

Chowlia Folk Dance (University of Bombay): Samir Tanna, Ajay Kapasi, Asit Kerawala, Aroop Sharma, Babita Rochlani, Sujata Ghatalia, Depalee Doshee, Naisha Desai, Bhavdeep Jaipurwale, Hussain Kharva and Indumati Lele and Prof. (Mrs.) Leena Vanmali (official).

Group Song (Dayal Bagh Educational Institute, Agra): Mamta Sharma, Rita Swami Neeti Mishra, Mrityunjaya Mathur, Chota Madan Markan, Sukhdev Roy, K.K. Upadhayay, Ravi Bhatnagar, Nandani Kumar, and Dr. S.B. Sharma (official).

Santoor Recital (University of Jodhpur): Nikhil S. Bidwalkar and Yashwant Sharma.

Seminar : Janaki Vishwanath (Tata Institute of Social Sciences, Bombay), Renu Gonela (Andhra University) and Shipra Shiromany (Agra University)

Awards & Medals

Endowment Lecture Awards 1987

The Indian National Science Academy (INSA) has recently announed the Endowment Lecture and Memorial Lecture Awards for the year 1987 to scientists for their outstanding contributions in their respecture fields. The recipients of the Awards are :

(1) **Professor K. Rangadhama Rao Memorial Lecture** to Professor P.T. Manoharan, FNA, Professor of Chemistry and Head, Regional Sophisticated Instrumentation Centre, Indian Institute of Technology, Madras for his contributions to the structure and spectroscopy of inorganic complexes.

(2) **Dr. G.P. Chatterjee Memorial Lecture** to Professor Prem Naraian, FNA, Director, Indian Agricultural Statistics Research Institute, New Delhi for his contributions in the field of agricultural statistics.

(3) **Dr. Har Swarup Memorial Lecture** to Professor Sivatosh Mookerjee, FNA, Dean, School of Life Sciences, Jawaharlal Nehru University, New Delhi for his contributions to our knowledge of regeneration in ciliates, recognition in sponges and regulative system in Hydra.

(4) **Professor Panchanan Maheshwari Memorial Lecture** to Professor T.V. Desikachary, FNA, Emeritus Professor, University Botany Laboratory, University of Madras for his original and significant researches on the biology, taxonomy and evolution of algae.

(5) **INSA-T.S. Tirumurti Memorial Lecture** to Professor S.C. Seal, FNA, 2, Fern Place, Calcutta for his outstanding contributions to the eradication of plague from India, discovery of exotoxin in the anaerobic cultures of cholera bacterium and prevention and control of several communicable diseases in India.

(6) **K.S. Krishnan Memorial Lecture** to Professor S.K. Joshi, FNA, Director, National Physical Laboratory, New Delhi for his contributions in the fields of Lattice dynamics of metals and electron states of disordered alloys.

(7) **Bires Chandra Guha Memorial Lecture** to Dr. Mahtab S. Bamji, Director-Grade Scientist, National Institute of Nutrition Hyderabed for his contributions in Vitamin B nutrition in relation to metabolism and collagen cross-links. (In particular Inter-relationship between Vitamin B nutrition and collagen structure, Protein-

calorie malnutrition and carnitine deficiency).

(8) **Dr. Nitya Anand Endowment Lecture Award** to Dr. (Smt.) Indira Nath, All India Institute of Medical Sciences, New Delhi for her contributions in the development of a macrophage based radiometric assay for the multiplication of the leprosy bacillus, and in the understanding of the immune defect in lepromatous leprosy.

(9) **Professor B.D. Tilak Lecture** Award to Dr. S.S. Kalbag, Director, Centre for Science Education and Research, Pabal in recognition of his total dedication in developing a science and technology programme that integrates education of youth and rural development.

News from Abroad

Asian Association of Open Universities

The Asian Association of Open Universities (AAOU) was decided to be established by the representatives from the open universities in Asia assembled for the first regional seminar on distance education held at Nonthaburi, Thailand in December, 1986. India, Indonesia, Japan, Republic of Korea, Sri Lanka and Thailand were represented at the regional seminar. The Association is proposed to be a non-profit making association of autonomous legally established institutions of higher learning concerned with education at a distance, i.e. education in which the systematic teaching and the communication between student and teacher or institution takes place mainly by multimedia means. The draft constitution of AAOU lists the following objectives for the Association.

(a) To widen the educational opportunities available to all the people of the region and to improve the cost-effectiveness of member institutions by exchanging management information, teaching materials and research.

(b) To help promote knowledge of education by distance teaching system, and develop its potentialities.

(c) To help promote professional and ethical standards amongst distance educators.

(d) To cooperate with official bodies and others directly or indirectly interested in education at a distance.

(e) To facilitate cooperation with other similar regional bodies in all the above matters.

(f) To do all other things incidental or conducive to the above matters.

Further information may be obtained by writing to Sukhothai Thammathirat Open University, Pakkred, Nonthaburi 11120, Thailand.

Higher Fees from Foreign Students

Foreign students planning to go to U.S.A. for higher education are likely to encounter higher tuition fees. The U.S. Law distinguishes between resident foreign students and resident American students. Both the categories were charged the same amount of tuition fees so far. In view of the rising number of foreign students enrolling in U.S. Universities, Massachuttees has enacted a new law, and other States are likely to follow suit, requiring aliens in state colleges to pay the 'true cost of education' which means a substantial increase in the tuition fees. According to the National Science Foundation a majority of students in many U.S. Universities are foreigners. More than 57% of doctoral students and 40% of graduate school enrolments in Engineering, Mathematics and Computer Science courses are foreigners. The largest number of students come from China, Korea, Japan, India, Iran and Iraq.

Correspondence Course in Evaluation Methodology and Examinations

Applications are invited from college/university teachers for admission to Correspondence Courses in Evaluation Methodology and Examinations at Basic Level, Intermediate Level and Advanced Level/Special Professional Course. The duration of each of the three courses is six months. A personal 'Contact Programme' for three days is planned for each of the three courses. Universities/Institutions sponsoring candidates can meet the registration/course fee from out of unassigned grants by UGC.

Request for prospectus and application form accompanied by a crossed Indian Postal Order for Rs. 10/- drawn in favour of the Secretary, Association of Indian Universities and a self addressed stamped envelope (Rs. 2/-) should reach the Project Director (Exams), Association of Indian Universities, 16 Kotla Marg, New Delhi 110002. Last date for receipt of applications is **5th October** for non-sponsored and **10th October, 1987** for sponsored candidates.

Sports News

Varsities Junior Badminton Team

Indian Universities Junior Badminton Team was selected after the Selection Trials organised at Rajasthan University, Jaipur on Sept. 8-9, 1987. Kiran Makode of Nagpur University will lead the universities team in the Junior National Badminton Championship to be held in Madras from Nov. 22-29, 1987. Other members of the team are: (1) Vikas Kumar—Meerut; (2) Prashant Upadhyaya—Meerut; (3) Jayesh Ashpaliya—Ravishankar; (4) Ashita Sedani—Nagpur; (5) Sulajja Firodia—Poona.

Prior to its participation in the Junior National, the team will attend a brief coaching session at Madras University.

University Women on Winning Spree

Indian Universities Women's Hockey Team, at the time of reporting, had secured the top position in its pool and qualified for the quarter finals of the Senior National Women's Hockey Championship being played at New Delhi. In its winning trail, Indian Universities defeated Maharashtra XI 3 : 1, trounced Mahakaushal XI 13 : 0 and convincingly beat Bihar XI 4 : 2.

In the quarter finals, the Indian Universities will meet the holders, the Railways.

News from Agril. Varsities

New Fodder Varieties

The Punjab Agricultural University (PAU) has released two new high-yielding fodder varieties, Oats-OL-9 and Punjab Guinea Grass-19, for general cultivation in Punjab.

Oats OL-9 is a tall, leafy, erect-growing and medium seeded variety which comes in flowering in 117 days. It is recommended for irrigated areas of the State and is suitable for taking single or two cuttings during February and March. Its average yield is 230 quintals per acre.

Punjab Guinea Grass-19 is a bold-seeded variety with good germination and low degree of seed shattering. Being a quick-growing variety, its first cutting is ready in 55 days and subsequent cuttings are available after an interval of 25 to 30 days. Its average yield is 600 quintals per acre in 5 to 6 cuttings from May to November.

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CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
October 5-9, 1987	Short-term Course on Advanced Image Processing for Remote Sensing.	To appraise the scientists/engineers, working in the area of Image Processing and its Applications to Remote Sensing, regarding techniques, developments and future trends in the field of Image Processing.	Indian Space Research Organisation (ISRO) in collaboration with IIT, Bombay.	Dr. T.V. Pavate, Chief Project Engineer [CSRE], Principal Programme Coordinator (Training), ISRO-IIT (Bombay) Space Technology Cell, CSRE Building, Indian Institute of Technology, Powai, Bombay, 400 076.
November 16-20, 1987	Seventh National Symposium on Radiation Physics	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
November 25-27, 1987	International Conference on Mud Architecture	To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.	Ministry of Urban Development, Govt. of India, in collaboraton with the Govt. of Kerala, HUDCO and the All India Housing Development Association.	Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & & Urban Development Corporation, K.G. Road, Bangalore - 560 009.
November 26-28, 1987	International Seminar on Instrumental Methods of Electro-Analytical Techniques.	To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electroanalysis.	Indian Institute of Science, Bangalore.	Prof. M.H. Dhananjaya, Principal and Chairman or the Organising Committee, S.J. College of Engg., Mysore.
December 7-11, 1987	Seventh Triennial International Conference on Thin Films. (ICTF-7)	To take stock of recent progress in the field of science, technology and applications of their films.	Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.	Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.
December 16-18, 1987	International Symposium on Electronic Devices, Circuits and Systems	To provide a forum to research workers all over the world for exchange of information and technical perceptions in electronic devices, circuits and systems.	Indian Institute of Technology, Kharagpur	Prof. N. B. Chakravarti, Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur - 721302
December 18-19, 1987	National Conference on Role of Universities in Implementation of New Education Policy	The Conference will focus on Management of Higher Education, Improvement in Efficiency and New Strategies in Higher Education vis-a-vis New Education Policy	Association of Indian Universities in collaboration with Osmania University, Hyderabad.	Dr. V. Natarajan, Project Director (Exams) Association of Indian Universities, 16, Kotla Marg, New Delhi-110002
December 28-30, 1987	Third National Conference on Surfactants, Emulsions and Biocolloids.	To provide an opportunity to technologists and experts from academic and research institutions and industries to exchange views and discuss developments related to latest findings from active research.	Aligarh Muslim University in collaboration with Indian Society for Surface Science and Technology.	Dr. H.N. Singh, Reader, Department of Chemistry, Aligarh Muslim University, Aligarh.

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Physics

1. Patil, N.B. *Studies on ferroelectric ceramics of rare earth vanadates.* Shivaji. Dr. S.H. Chavan.

Chemistry

1. Ahluwalia, Vibha. *Quantum chemistry.* Delhi. Dr. (Miss) Rita Chadha.

2. Banerjee, Suniti. *Biophysical chemistry.* Delhi. Prof. M.V.R. Rao.

3. Bhardwaj, Rakesh. *Synthetic studies in insect juvenile hormone like substances.* HP. Dr. R.K. Mahajan.

4. Gaud, R.S. *Physico-kinetic studies of some drugs in relation to their biological activity.* Devi Ahilya. Dr. S.C. Chaturvedi and Dr. P.V. Khadikar.

5. Goyal, Samta. *Synthesis of selected phenylpropanoid metabolites.* Delhi. Dr. M.R. Parthasarathy.

6. Gupta, Vijay Kumar. *Thermodynamic and transport properties of some transition metal sulphates in urea-water solutions.* HP. Dr. M.L. Parmar.

7. Rajiv. *Effect of additives on the properties of nylon during degradation.* Delhi. Dr. R. Chandra.

8. Ratna. *Biophysical chemistry.* Delhi. Prof. M.V.R. Rao.

9. Saini, Rashmi. *Physico-chemical properties of high polymeric engineering materials.* Delhi. Dr. R. Chandra.

10. Satish Kumar. *Transport properties of some 1 : 1 electrolytes in aqueous dextrose solutions.* HP. Dr. R.L. Blokhra.

11. Satnam Kaur. *Quantum mechanical study of molecular systems.* Delhi. Prof. N.K. Ray.

12. Saxena, Shashi. *Physico-chemical studies of biopolymeric system.* Delhi. Dr. M.V.R. Rao.

13. Sharma, Rajendra Kumar. *Synthesis and antimicrobial activity of some substituted I-9 anilino acridines.* Devi Ahilya. Dr. P.V. Khadikar and Dr. Subhash Chaturvedi.

14. Sharma, Yogeshwar. *Kinetics and mechanism of complexation of metal ions with biochemical ligands using stopped flow spectro photometer.* Delhi. Dr. H.C. Malhotra.

15. Singh, Vinay Kumar. *Inorganic chemistry of high order derivatives. Spectrophotometric study of metal complexes.* Delhi. Dr. H.B. Singh.

16. Taneja, Poonam. *Enzyme-assisted organic synthesis.* Delhi. Dr. V.S. Parmar

17. Thapliyal, Bipin Prakash. *Studies on physico-chemical and mechanical properties of synthetic polymeric engineering materials.* Delhi. Dr. R. Chandra.

Earth Sciences

1. Babbar, Neeru. *Micropalaeontology and stratigraphy.* Delhi. Dr. V. Sharma.

Engineering & Technology

1. Ali-Zand-Vakili. *Hydrodynamic stability of boundary layer flow.* Delhi. Dr. D. Venkateswarlu.

2. Chopra, Mukul. *Electromagnetics and antennas.* Delhi. Dr. K.K. Gupta.

3. Dehleghi, Mohan Hayati. *Design of microwave filters using dielectric wave guide grating.* Delhi. Dr. S.C. Mathur.

4. Khurmi, Ishwer Singh. *A study on the determination of group parameters for water quality.* Delhi. Prof. A.F.S.A. Aewel.

5. Kulshrestha, Rakesh Kumar. *Development and properties of newer carbon materials made from specially prepared pitches.* Delhi. Dr. Rajnish Prakash and Dr. C.L. Verma.

6. Nagpal, Alka. *Design analysis and optimisation of saw devices with regard to propagation losses and frequency limitations.* Delhi. Dr. O.P. Srivastava.

7. Ramani, Ashwani Kumar. *Design related modelling and analysis of multiprocessor systems.* Devi Ahliya. Dr. P.K. Chande.

8. Singh, Mukesh Pratap. *Fibre optics.* Delhi. Dr. Enakshi K. Sharma.

9. Subramony, V. *Artificial intelligence.* Kerala. Dr. M. Harishankar.

BIOLOGICAL SCIENCES

Anthropology

1. Khanna, Asha. *Study of genetic polymorphisms of red cells among four population groups of Jammu and Kashmir.* Delhi. Dr. M.K. Bhasin.

2. Mondal, Prakash Ranjan. *Chromosome aberrations.* Delhi. Dr. R.K. Kumbani.

3. Roy, Lona. *Cultural anthropology.* Delhi. Dr. V.C. Channa.

Botany

1. Arora, Renu. *In vitro morphogenesis.* Delhi. Dr. Sant S. Bhojwani.

2. Batra, Vinita. *Reproductive biology of flowering plants.* Delhi. Dr. K.R. Shivana.

3. Dewan, Saguna. *Stress physiology.* Delhi. Dr. P.S. Ganapathy.

4. Gangadharan Pillai, K. *Morphogenesis in ornamental plants.* Delhi. Prof. H.Y. Mohan Ram and Dr. I. Usha Rao.

5. Mittal, Neelima. *Studies on predaceous fungi.* Delhi. Dr. K.G. Mukerji.

6. Miyan, Beena. *Studies on nitrogen metabolism under salt stress in linseed, Linum-usitatissimum L.* Rohilkhand. Dr. Pramod Kumar.

7. Pasricha, Seema. *Reproductive biology of marine algae.* Delhi. Prof. M.R. Vijaya Raghavan.

8. Rajeshwari, M.S. *Ecological responses of plants in semi-arid environment.* Delhi. Dr. K.M.M. Dakshini.

9. Saxena, Manju. *Xenobiotic biotrans formation mechanisms in Arpergillus flams.* Delhi. Dr. K.G. Mukerji and Dr. H.G. Raj.

10. Sharma, Reetu. *Ecological impact assessment with reference to nutrients.* Delhi. Dr. K.M.M. Dakshini.

Zoology

1. George, T. Basil. *An investigation on certain aspects of biology of aggression in the Indian musk shrew, Suncus murinus viridoscens (Blyth).* Kerala. Dr. M. Balakrishnan.

2. Kiruba, J. *Studies on the potency of neem products on the control of certain coleopteran pests.* Kerala. Dr. G.K. Karanavar.

3. Kuruvilla, Sara Shirley. *Influence of feeding deterrants and dormancy or digestion of certain insect pests.* Kerala. Dr. G.K. Karanavar.

4. Maheswari, N.S. *Modulatory mechanisms of corpus allatum activity in the castor semilooper, Achoea janata Linn.* Kerala. Dr. D. Muraleedharan.

5. Mary Josepha, A.V. *Some aspects of spermatogenesis in Opisine arenosella (Lepidoptera : Cryptophasidae) Dysdercus cingulatus (Heteroptera: Pyrrhocoridae) and Oryctes rhinocoros (Coleoptera (Scarabacidae).* Karala. Dr. V.K.K. Prabhoo.

6. Michael, Rose. *Hormones and metabolism in lower vertebrates.* Kerala. Dr. Oommen V. Oommen.

7. Neseebi Beegum, K. *Studies on some aspects of ethology of certain teleost fishes.* Kerala. Dr. K.M. Alexander.

8. Sheela Devi, D. *Biology of gall forming psyllids.* Kerala. Dr. N.R. Prabhoo.

9. Thomas, George. *Reproductive biology of oligochaetes with special emphasis on the accessory sex glands.* Gandhiji. Dr. M.I. Andrews.

10. Vahida, T. *Biology of gall producing mites.* Kerala. Dr. N.R. Prabhoo.

Medical Sciences

1. Goyal, Rita. *Clinical population genetics.* Delhi. Dr. S. Tara Devi.

2. Jerath, Rekha. *Clinical genetics.* Delhi. Dr. S. Tara Devi.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Chakrabarti, Charugopal. *On the foundation of statistical thermodynamics : Stochastic and information theoretics.* D. Sc. Calcutta.

2. Choudhuri, Bijaya. *On some problems of plasticity including the effect of non-hemogeneity.* Burdwan. Prof. Sakti Kanta. Chakraborty.

3. Fonsecca, Philippina. *On the iterations of generalized Euler functions.* Osmania.

4. Kanniappan, P. *Studies in the theory of optimization*. Madurai.

5. Pathania, Ram Chand. *Some stability problems in hydrodynamics and hydromagnetics*. HP.

6. Rajendra Prasad, Jaladi. *Contributions to fixed point theory in metric and 2-metric spaces*. Andhra.

7. Saikh Mohammad Hassan. *On certain investigations in Riemannian geometry*. Burdwan. Prof. Hrishikesh Sen.

8. Sharadha, S. *On certain non associative rings and algebras with commutators in the nuclei*. IIT Delhi. Dr. Yash Paul.

9. Vijayarani, L. *Symmetric group algebras*. Madurai.

Statistics

1. Bhattacharjee, Prabir Kumar. *Statistical analysis of long-term experiments on tea*. Gauhati. Prof. J. Medhi and Prof. J. Roy.

2. Julka, Abnash Chander. *A statistical analysis of inequality and poverty amongst cultivating house-holds : A case study of District of Patiala, Punjab, India*. Panjab.

3. Singh, Jai Pal. *Analysis of linear models : An information theoretic approach*. HAU.

4. Vijay Kumar. *Some contributions in multifactor designs*. Kurukshetra.

Physics

1. Barthakur, Anjali Devi. *A study of the production of heavy nuclear fragments in 50* $\frac{Gev}{C}$ *pion, 1.8* $\frac{Gev}{C}$ *Kaon and 200* $\frac{Gev}{C}$ *proton collisions in nuclear emulsion*. Gauhati. Dr. G.C. Deka.

2. Baruah, Kalyanee. *Studies on the atmospheric cerenkov radiation from large cosmic ray showers*. Gauhati. Prof. K.M. Pathak.

3. Basu, Chandan. *Study of nonlinear wave interaction in plasmas*. Ravishankar. Dr. S. Guha.

4. Beniwal, Radhey Shyam. *Thermal behaviour of solar ponds*. Rajasthan. Prof. R.C. Bhandari.

5. Choudhury, Tapan Roy. *Design and development of a scattering chamber and the investigations in alpha induced few nucleon experiments*. Burdwan. Dr. Sudebsankar Dasgupta.

6. Divya. *Studies on the VLF emissions from lightning*. Roorkee.

7. Joshi, Vinayak Krishnarao. *A study of superluminal optical phenomena*. Shivaji. Dr. M.T. Teli.

8. Mukesh Kumar. *Collision of charged particles from atoms and molecules*. Roorkee.

9. Pal, Swatantra. *Solid state nuclear track detectors and their application to geochronology and geophysics*. Kurukshetra.

10. Ramachandran, M. *Studies on diffusion controlled periodic phenomenon of precipitation*. Kurukshetra.

11. Sadhana. *Thermal properties of binary alloys*. IIT Delhi. Prof. B.B. Tripathi and Dr. H.C. Gupta.

12. Sarkar, Somenath. *A study of the propagation characteristics of circular and elliptical core monomode optical fibres*. IIT Delhi. Dr. K. Thyagarajan and Dr. I.C. Goyal.

13. Sharma, Pramod Kumar. *Studies on xerographic characteristics of some mixed and multi-layered photo-receptor systems*. IIT Delhi. Prof. J.K.C. Pillai.

14. Singh, Kiran. *Triple differential cross sections for the electron impact ionization of hydrogen and helium at intermediate and high energies*. Roorkee.

15. Singh, Narayan. *Role of atmospheric ions on condensation and cloud formation processes*. Roorkee.

16. Singh, Pratap. *A study of electrification and precipitation growth in thunder cloud*. Roorkee.

17. Subhash Chander. *Study of heavy ion tracks in solid state nuclear track detectors*. Kurukshetra.

18. Surya Narayana Reddy, G. *Dynamical study of crystalline and non-crystalline materials*. IIT Delhi. Prof. B.B. Tripathy and Dr. B.C. Gupta.

Chemistry

1. Bamezai, Rajinder Kumar. *Polymorphism of smectic liquid crystalline substances*. Jammu. Dr. N.K. Sharma.

2. Chauhan, R.S. *Use of impregnated layer for TLC separation of compounds of pharmaceutical and analytical importance*. Roorkee.

3. Dave, Malti. *Physico chemical studies on the derivatives of blue chromium peroxychromate*. Durgawati. Dr. C.V.P. Pillai.

4. Deo, Medha Girish. *Studies in biologically active compounds using chromatography techniques*. Shivaji. Dr. B.B. Ghatage and Dr. M.H. Jagdale.

5. Dhabhai, Deoki Nandan. *Study of characteristic behaviour of certain mesogens-liquid crystals*. Baroda.

6. Gangarade, Surendra Kumar. *Studies on some essential oils*. Devi Ahilya.

7. Kistayya. *Kinetics and mechanism of oxidation of some organic compounds by N-bromosuccinimide*. Osmania.

8. Kochher, Madhu. *Growth and characterisation on insulator/n-GaAs and metal/n GaAs interfaces*. Kurukshetra.

9. Maurya, Mannar Ram. *Studies on coordination complexes of polydentate ligands*. Kurukshetra.

10. Mukhopadhyay, Nibedita. *Studies in the metal complexes of schiff bases containing diazoles/diazines*. Calcutta.

11. Mukhopadhyay, Subir Kumar. *Studies on the vapour phase oxidation of orthoxylene and naphthalene to ophthalic anhydride on a common catalyst*. ISM. Dr. N.S. Rawat and Dr. M. Chakraborty.

12. Nagaraja Rao, K. *Studies on the opto-electronic characteristics of cadmium sulphoselenide*. Madurai.

13. Naveen Kumar, T. *Preparation and properties of polyol esters of fatty acids*. Osmania.

14. Parekh, Prakash Chimanlal. *Synthetic and analytical studies of organic reagents and their mixed ligand complexes*. Baroda.

15. Pourwal Madhu. *Chemical investigations of medicinally and economically important plants regionally available in Malwa and Nimar*. Vikram. Dr. B.K. Mehta.

16. Rajaram, V. *Studies in metal complexes of ligands containing nitrogen and oxygen*. Madurai.

17. Ramachandra Rao, Alluri. *Thermal studies on the derivatives of cellulose and cellobiose*. Kurukshetra.

18. Rama Krishna Reddy, Ch. *Search for insecticidal/antifeedant compounds : Synthesis of 2-substituted chromones and chemical examination of the indigenous plant, Astragalus leucocephalus*. Osmania.

19. Sabitha, T. *Investigations on phase transfer catalysis : Synthesis of some heterocyclic compounds of physiological interest.* Osmania.

20. Sharma, Debendra Nath. *Some aspects of silicon-mediated reactions.* Gauhati. Dr. R.P. Sharma and Dr. P.K. Sarma.

21. Sharma, Rashmi. *Studies of heterocyclic natural products compounds analogus to cannabinoids.* Roorkee.

22. Sharma, Vinay Prabha. *Heterocyclic compounds studies on the synthesis of substituted chromones of potential medicinal interest.* Kurukshetra.

23. Somani, Rajesh Shantilal. *Studies on synthetic zeolites.* Bhavnagar. Dr. V.P. Pandya.

24. Sorathia, Pujabhai Bhavanbhai. *Studies on coordination compounds.* Bhavnagar. Dr. K.J. Shah.

25. Sunita, S. *Studies on the analytical chemistry of some industrial pollutants.* Ravishankar. Dr. V.K. Gupta.

26. Srinivasulu, P. V. *Oxidation of some organic compounds by hexavalent manganese : A kinetic and mechanistic study.* Osmania.

Earth Sciences

1. Anand, Arvind. *Deformation and strain patterns of the Central Himalayan metamorphics from North Western Garhwal.* Roorkee.

2. Mukherji, P.K. *Geochemistry and evolution of Pavagarh Lava flows, Gujarat.* Roorkee.

3. Shreedhar Satish Kumar. *Study of the central crystalline rocks occurring in the area East of Wangtu, District Kinnaur, Himachal Pradesh, India.* Panjab.

Engineering & Technology

1. Anand, Amarjeet Kaur. *Studies on physico-chemical characteristics, milling and cooking quality of parboiled rice as influenced by the vartiety and stage of harvesting.* PAU.

2. Arun Kumar. *On some design aspects of computer communication net-works.* Roorkee.

3. Agrawal, R.K. *Behaviour of shallow foundations subjected to eccentric inclined loads.* Roorkee.

4. Basha A.N. *On application of microprocessor to substation relaying.* Roorkee.

5. Bhattacharyya, Arabindasekhar. *Studies on modification and compounding of polyvinyl chloride (PVC).* Calcutta.

6. Chellappan, C. *Computer methods and models to administer selection of candidates for professional courses.* Anna.

7. Das, Lalit Mohan. *Studies on timed manifold injection in hydrogen oprated spark ignition engine : Performance, combustion and exhaust emission characteristics.* IIT Delhi. Prof. H.B. Mathur.

8. De, B.P. *Investigations into propagation of errors in analytical aerial triangulation andd adjustment.* Roorkee.

9. Deshpande, P.D. *Spatial aggregation effects in gravity model trip analysis.* Roorkee.

10 Ganguly, Dilip Satya Shekhar. *A study on the development of solar concentrator by the application of facussed or a flat plate collector system.* Durgawati. Dr. C.V. Pillai.

11. Ghosh Arabinda. *Intermittency and transport phenomena in turbulence.* Calcutta.

12. Ghosh, P.K. *Mixing characteristics and mechanical properties of cast Al (Mg) AlO_3 particulate composite.* Roorkee.

13. Ghumman, M.S. *Response of a pile driven by longitudinal vibrations.* Roorkee.

14. Gopala Raju, Datla Rajavijaya. *A general method for analysis of shearwall structure.* Osmania.

15. Grover, Suresh. *Nonlinear analysis of frame-shear wall structures.* Roorkee.

16. Gupta, S.K. *Mass transfer studies between gas bubbles agitated metal and slag systems.* Roorkee.

17. Gupta, S.P. *Steady state and transient analysis of chopper controlled kramer drive.* Roorkee.

18. Gupta, S.R. *A study of ignition behaviour and spatter losses during dip transfer in Mag. welding.* Roorkee.

19. Jain, N.C. *Studies in some Mn-Cr-Cu martensitic and austentic white cast irons.* Roorkee.

20. Mukherjee, D. *Studies on the corrosion of high carbon cold drawn steel rope wires and its control.* ISM. Dr. N.S. Rawat and Dr. S.V.K. Iyer.

21. Narasimha Reddy, D. *Some studies on swirling compressible flow through a vaneless radial diffuser.* IIT Delhi. Prof. S.M. Yahya and Dr. D.P. Agrawal.

22. Nataraj Murthy, S. *Offset feed paraboloidal and shaped reflectors for solar energy concentration.* IIT Delhi. Prof. S.S. Mathur and Prof. T. Vishwanathan.

23. Nidhi, Shivachandra. *Instabilities in externally pressurized orific compensated air journal bearings.* Burdwan. Prof. Sushil Kr. Basu.

24. Pradhan, K.C. *Design and analysis of large electronic circuits.* Roorkee.

25. Ramayya, Kumar. *Synthesis of regular VLSI layouts from high level descriptions.* IIT Delhi. Dr. Anshul Kumar and Dr. Surendra Prasad.

26. Razak, S.A. *Factors affecting reproduction accuracy in electrical discharge machining.* Roorkee.

27. Sharma, K.K. *Microstructure and mechanical behaviour of P/M superalloys based on Zhs6-K.* Roorkee.

28. Sharma, Purnima. *A microprocessor based protection scheme using fast walsh-hadamard transform.* IIT Delhi. Dr. J. Henry and Dr. S.I. Ahson.

29. Sinha, Suresh K. *Segmental prestressed concrete box girder bridges.* Roorkee.

30. Soi, Inder Mohan Nath. *Topological optimization of large scale reliable computer communication networks.* Kurukshetra.

31. Somasekhara, B.V. *On some aspects of generalized approach for the application of GT to manufacturing industries.* Roorkee.

32. Soni, Siddharth K. *Application of remotely sensed visual and digital data in the field of Earth Sciences.* Devi Ahilya.

33. Thakur, Kiran. *Kinetic and analytical studies on the mechanism of certain electron transfer reactions in solution.* Durgawati. Dr. K.C. Nand.

34. Yoganandam, Y. *Studies on spectrum and boaring estimation algorithms.* Osmania.

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Sr. No.	Name of Post	No. of Post	Remarks
(1)	Reader in Computer Science	One	
(2)	Lecturer in Computer Science (Third Attempt)	One	This post is reserved for Scheduled Tribes candidate.
(3)	Technical Assistant	One	
(4)	Tape/Disk/Librarian (Second Attempt)	One	This post is reserved for S T. Candidate.

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OR

(2) Master's Degree with first Class and Post-Graduate Diploma with First class in Computer Science and Computer Applications. Or (3) Master's Degree with Second Class and Post-Graduate Diploma in Computer Science and Computer Applications in Second Class with one year experience OR (4) M.B.A. with specialisation in Computer and Operation Research Techniques.

In case of Lecturer, if no candidate belonging to Scheduled Tribe is available in response to the advertisement, candidates belonging to Open category can be considered.

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OR

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K.R. Joshi
Offg. REGISTRAR

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Advertisement No. 1/87

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2. **Scientist Grade 'C'** : 2 Posts
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Essential

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Desirable

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Master's degree of a recognised University in any subject with Hindi and English as main subjects at degree level.

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Master's degree of recognised University in any subject with Hindi/English medium and English/Hindi as a main subject at degree level.

OR

Master's degree in Hindi/English or in any other subject with Hindi/English medium, with English/Hindi as a main subject or as medium of examination at degree level.

OR

Bachelor's degree with Hindi and English as main subjects or either of the two as medium of exam. and the other as a main subject plus recognised Diploma Certificate course in translation from Hindi to English and vice versa or two years experience of translation work from Hindi to English and vice versa in Central/State Govt. Offices, including Government of India undertakings.

Job Description

He/She would be required to translate document/correspondence/circulars etc. from English to Hindi and vice versa. The incumbent would generally assist in the implementation of official language policy to promote the use of Hindi. He/She will also be responsible to organise the meetings of the official language implementation, committee, implement its recommendations and to submit all relevant returns/information for progressive use of Hindi.

Selection will be made through competitive exam. consisting of two papers :

1. Translation from English to Hindi and vice versa,
2. General Hindi and General English followed by interview.

The selected candidates will be posted at S.E.R.C. Complex, Ghaziabad and will also be liable to be transferred any where in India. The selected candidates for the posts of Scientist E.I and C will be appointed on contract basis for a period of 6 years including 2 years probationary period. The post of Purchase Asstt. and Jr. Translator (Hindi) are temporary but likely to continue. The posts carry usual allowances as admissible to Central Govt. employees.

Applications in prescribed form obtainable from the Admn. Officer, Structural Engineering Research Centre, Post Bag No. 10, Gbaziabad by sending self-addressed and stamped envelope of Rs. 1.80 P. of 28x13 cms by 5th Oct. 1987 should reach him duly completed together with attested copies of certificates/testimonials and crossed Indian Postal Order for Rs. 8/- payable to Administrative Officer, S.E.R.C. Ghaziabad by **25th October, 1987** (Sch. Caste/Sch. Tribe candidates are exempted from this fee). Application from employees working in Govt. Deptt./Public Sector Organisations and Govt. funded agencies will be considered only if forwarded through proper channel and with the clear certificate that in the event of selection of the candidate he/she will be relieved within one month of receipt of the appointment order. Incomplete applications as well as those received after the due date are liable to be rejected. Those who are called for interview will be paid travelling allowance to the extent of a single second class return rail fare (Mail or Express) by the shortest route as per rules.

The selected candidates will be liable to serve, if so required in any Defence Service or post connected with the defence of India for a period of not less than four years before attaining the age of 40 years.

Candidates are required to mention clearly on the application if any of their close relative is working in SERC, Ghaziabad/Roorkee and if so, full details thereof.

Since it is not possible to call all the eligible candidates for interview/personal discussion, the applications shall be short listed for the purpose and the decision of the SERC in this behalf will be final and binding on all concerned.

Canvassing in any form and/or bringing in any influence political or otherwise will be treated as disqualification for the posts. Interim enquires will not be attended to.

ANNA UNIVERSITY

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Advertisement No. 20620/L3/87-2

Dated : 16.9.87

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Last date for receipt of completed application is **30.10..87.**

Note : Pay Scale to the above post is likely to be revised in due course, based on U.G.C.'s recommendations.

REGISTRAR

UNIVERSITY OF ROORKEE
ROORKEE

Clarification of the Advertisement No. ESTT(A)/2/A-87

Dated 22.8.1987

Physics Department : Positions of Reader 1 TLR and Lecturers 3 TLR may be read as Regular.

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No. A. 12024(2)/87-LC
Government of India

MINISTRY OF LAW & JUSTICE
Department of Legal Affairs
Law Commission

Shastri Bhavan, New Delhi
Dated the 14th August 1987.

OFFICE MEMORANDUM

Subject : –Filling up the Post of Additional Law Officer in Law Commission of India.

It is proposed to fill up one (or two) posts of Additional Law Officer in Law Commission of India under the Ministry of Law and Justice on transfer on deputation (including short term contract)/transfer basis from amongst suitable officers. The pay scale of the post is Rs. 4500-150-5700. The eligibility conditions and nature of duties etc. of the post are given in the enclosad Annexure.

2. The Officer selected will have the option to draw his grade pay plus deputation (duty) allowance in accordance with the instructions contained in the Ministry of Finance O.M. No. F. 1(11)—EIII(B)/75 dated the 7th November, 1975 as amended from time to time or to have his pay fixed in the scale of pay of the post. The rates of deputation (duty) allowance admissible at present are @ 5% of basic pay subject to a ceiling of Rs. 250/- per month for transfer within the same station and @ 10% of basic pay subject to a ceiling of Rs. 500/- per month in other cases.

3. The period of deputation including period of deputation in another ex-cadre post held immediately preceding this appointment in the same or some other organisation/department of the Central Government shall not exceed 5 years.

4. The cadre authorities are requested that the applications (in triplicate) in the enclosed proforma duly signed by the candidates and countersigned by the employer alongwith the complete and uptodate Confidential Reports of the officers, who could be spared in the event of their selection may be sent to Under Secretary latest by **20th October 1987**. Applications received after the last date or without the Confidential Reports or otherwise found incomplete will not be considered. While forwarding the applications it may be verified and certified that the particulars furnished by the officers are correct and that no disciplinary case is pending or contemplated against the officer.

P. Raut
Under Secretary to the Government of India

ANNEXURE

1. Name of the Post : Additional Law Officer
2. Classification : General Central Service-Group 'A' Gazetted.
3. Scale of Pay : Rs. 4500-150-5700
4. Eligibility Conditions : Officer under Central/State Government/Union Territories/Government Research Institutions/Universities :

(a) (i) Holding analogous posts on a regular basis;

Or

(ii) with 5 years' regular service in posts in the scale of Rs. 3700-5000 or equivalent; and

(b) Possessing the following educational qualifications and experience :

(i) Master's degree in Law of a recognised University or equivalent;

(ii) Should have 10 years teaching and/or research experience in Law.

Or

(i) Degree of Law of a recognised University or equivalent;

(ii) 12 years' teaching and/or a research experience in Law.

Or

should have been a member of a State Judicial Service for 12 years

Or

should have held a post in the legal department of a State for 12 years or a Central Government servant who has had experience in legal affairs for 12 years.

Or

should be a qualified Legal Practitioner.

Note : 1 An Advocate or pleader who has practised as such for 12 years or an attorney of the High Court of Bombay or Calcutta who has practised as such for 8 years or has practised as such as an attorney and Advocate for a total period of 10 years.

Note 2 : In computing the period during which a person has held any office in the State Judicial Service or in the legal department of a State or under the Central Government or under an Institution, University, etc., there shall be included any period during which he has been a legal practitioner.

Note 3 : In computing the period during which a person has been a qualified legal practitioner, there shall be included any period during which he has held any office in the State Judicial Service or has held a superior post in the legal department of a State, an Institution, University, etc., or has been a Central Government servant having experience in legal affairs.

Note 4 : Qualifications are relaxable at the discretion of the Union Public Service Commission in case of candidates otherwise well qualified.

Note 5 : The qualification (s) regarding experience is/are relaxable at the discretion of the Union Public Service Commission in the case of candidates belonging to Scheduled Castes and Scheduled Tribes if, at any stage of selection, the Union Public Service Commission is of the opinion that sufficient number of candidates from these communities possessing the requisite experience are not likely to be available to fill up the vacancies reserved for them.

5. Nature of Duties : Research in the field of Law and preparation of draft Reports.
6. Headquarter : Delhi.

FROFORMA

1. Name :
2. Date of Birth :
3. Date of Retirement Under Central/State : Government/Universities/other bodies, Rules etc. :
4. Details of Educational Qualification :

   (A comparison of educational qualifications required and possessed by the Officer may be given) :
5. Designation of the post held and date from which held on regular basis :
6. Scale of the Post held and present pay :
7. Details of experience in the field of Law/Legal work/Legal Research.

Name of the employer (1)	Designation of the Post & Pay Scale (2)	Period from—to (3)	Nature of work handled (4)

8. Whether belongs to SC or ST :
9. Remarks :

SIGNATURE OF THE CANDIDATE

COUNTERSIGNED
EMPLOYER

CENTRAL SCIENTIFIC INSTRUMENTS ORGANISATION

(Council of Scientific & Industrial Research)
Sector 30, Chandigarh-160020.

Advertisement No. 4/87
(Part-I)

Applications are invited for the following posts in Central Scientific Instruments Organisation, Chandigarh :-

1. Scientist 'C' (One Post) (Rs. 3000-100-3500-125-4500)

Qualifications : Post No. 1/1 : First Class B.E./B.Tech. in Electronics Engg. with six years experience in Microprocessor based Instrumentation OR M.E./M. Tech. in Electronics Engineering with 4 years experience in Microprocessor based Instrumentation.

Job Requirements : The candidate must have sound practical experience in the design and development of Microprocessor based data processing instruments in the area of electro-optical instrumentation. Candidates having experience in the area of digital signal processing and development of P.C. based instruments will be preferred.

2. Scientist 'B' (Five Posts) (Rs. 2200-75-2800-EB-100-4000) :

Qualifications : Post No. 2/1 & 2 : B.E. (Ist Class) in Electronics Engineering OR Computer Engineering. Experience in Microprocessor based Instruments/Software Development in high level languages will be preferred.

Qualifications : Post No. 2/3 & 2/4. QRs ! same as for Posts No. 2/1 & 2/2.

Qualifications: Post No. 2/5: M.Tech., Applied Optics OR Ist Class M.Sc. (Tech.) Applied Physics with specialisation in Applied Optics.

Note : Three posts of Scientist 'B' (Posts No. 2/3 & 2/4 & 2/5) are initially for one year only or the period of deputation of incumbents against whom these are to be filled whichever is earlier.

3. Senior Scientific Assistant (One Post) (Rs. 1640-60-2600-EB-75-2900)

Qualifications : Post No. 3/1 : B.E. in Electronics Engineering OR Computer Engineering. Experience in Microprocessor based Instruments/Software Development in high level languages will be preferred.

4. Technical Assistant (Grade VIII) (Two Posts) (Rs. 1400-40-1800-EB-50-2300)

Qualifications: Post No. 4/1 : Diploma (3 years duration) in Instrument Technology from Indo-Swiss Training Centre OR equivalent.

Qualifications : Post No. 4/2 : Diploma (3 years duration) in Electronics Engg. from a recognised institution. Job requirements. The candidate would be required to work on Wiring, Assembly, PCB making & Testing of Electronics Circuits needed for digital instruments.

(Part-II)

(Posts Reserved for Scheduled Caste/Tribe Candidates)

Persons belonging to these communities should apply with attested copies of Community Certificate from appropriate authority.

Scientist 'B' (Two Posts) (Rs. 2200-75-2800-EB-100-4000)

Qualifications: Post No.5/1 (Reserved for ST Candidates) : B.E. (Ist Class) in Electronics Engg. OR Computer Engg.

TATA INSTITUTE OF SOCIAL SCIENCES

DEONAR, BOMBAY-400 088

ANNOUNCES

Post-Graduate Certificate in Research Methodology (one semester) Commencing from November 26, 1987

Eligibility

Master's Degree in one of the social sciences or social work of a recognized university with an overall of 50 per cent of the marks or an average 'B' grade. Candidates who have appeared for the qualifying examination may apply in anticipation of their results.

Objectives

The programme is designed especially to equip post-graduate scholars with the requisite knowledge and skills in social research methodology so that they can carry out research projects (doctoral and other) with competence and confidence.

A copy of the brochure and application can be obtained from the Assistant Registrar (Academic) of the Institute by sending a Demand Draft of a Bank for Rs. 20/- in favour of the Institute.

The **last date for receipt of the completed application form** with a registration fee of Rs. 25/- is **October 15, 1987.**

N. Krishnamoorthy
REGISTRAR

Experience in Microprocessor based Instruments/Software Development in high level language will be preferred.

Qualifications : Post No. 5/2 (Reserved for Scheduled Caste candidates) Qualifications requirements—same as for the Post No. 5/1 above.

Note : Post No. 5/2 is to be filled up for one year only OR for the period of deputation of incumbent against whom this is to be filled whichever is earlier.

A Lower Standard of suitability consistent with efficiency will be applicable to Scheduled Caste and Scheduled Tribe Candidates in respect of Posts Reserved for the number of Posts in each category likely to vary at the time of Selection.

General Conditions Applicable to all above Posts

Candidates appointed with engineering qualifications, if so required, will be liable to serve in any Defence Service or post concerned with the Defence of India for a period of not less than four years including the period spent on training, if any, provided that such person (i) shall not be required to serve as aforesaid after the expiry of ten years from the date of appointment and (ii) shall not ordinarily be required to serve as aforesaid after attaining the age of forty years.

All posts are temporary and carry usual allowances admissible under the Central Government Rules. The total monthly emoluments at the minimum of the pay scales will be as under :

Minimum of the Scale of pay	Total emoluments at Chandigarh
Rs. 3000/-	Rs. 3560-00
Rs. 2200/-	Rs. 2616-00
Rs. 1640/-	Rs. 2011-00
Rs. 1400/-	Rs. 1652-00

Services of incumbents are transferable anywhere in India. Higher initial start can be given to deserving candidates. For regular posts Scientist C/B in CSIO, appointments will be on contract basis for a period of six years unless the selected candidates happened to be permanent CSIR/Govt. employees. Posts No. 2/3, 2/4, 2/5 in Part I & Post No. 5/2 in Part II are of short duration and appointment will be for a period of one year only OR the period of deputation of incumbent against whom the posts are being filled whichever is earlier. Fare limited to single second class rail fare by the shortest route from the place of residence/actual departure whichever is nearest will be defrayed to and fro Chandigarh on completion of the return journey after interview subject to production of cash receipt/bus tickets.

Application forms, free of cost, are obtainable before **16.10.1987** from the Administrative Officer, Central Scientific Instruments Organisation, Sector-30 Chandigarh-160020 by sending self-addressed and stamped Rs. **1.40p.** envelope of 23x10 cms. **Separate Application** is required to be submitted for each post clearly indicating post No. as in the Advertisement.

Applications with attested copies of certificates of qualifications, experience, date of birth/Community certificate in respect of Scheduled Caste/Tribe candidates from appropriate authority should accompany alongwith non-refundable application fee of Rs. 8/- no IPO is required from Scheduled Caste/Tribe & Ex-Servicemen candidates) in the form of crossed Indian Postal Order drawn in favour of the Director, Central Scientific Instruments Organisation, Chandigarh. Application received without Postal Order will be rejected. Last date for receipt of completed application is **5.11.1987**.

Persons working in Govt. Departments/Undertakings/Autonomous Organisations should apply through proper channel. Incomplete applications in any form or received after the last date for whatever reasons will be rejected.

Note

1. Canvassing in any form and/OR bringing in any influence political or otherwise will be treated as a disqualification for the post.

2. Interim enquiries will not be attended to.

3. Any incorrect or incomplete formation recorded in any applicati form will render the applicant ineligil for consideration even after appointme it will render the candidate to stri disciplinary action and dismissal fro service.

4. Since it is not possible to call a the eligible candidates for interview th applications will be short-listed for th purpose and the decision of the Institut will be final.

—MMG-

GUJARAT VIDYAPITH
AHMEDABAD-380014

Applications are invited for the following posts :

(1) Principal (1500-2500) Shri Mahadev Desai Samaj Seva Mahavidyalaya (Post Graduate College), (2) Professor (1500-2500) Social Work, Education (3) Reader/ Associate Director (1200-1900) Curricular Cell, Monitoring Cell for Development Schemes, Tribal Education, Gandhian Thought and Education for Correspondence Unit at Post-Graduate Level, Library and Information Science, (4) Co-ordinator (1100-1600) Computer Science Unit.

Qualifications : as per U.G.C. norms as approved by the Vidyapith. Minimum Higher Second class degree both at Graduate and Postgraduate level and Ph.D. or equivalent research work and prescribed experience in the relevant field.

1. All the posts are transferable to village service centres.

2. Those who are appointed at Ahmedabad campus will be required to undertake teaching, research, extension work at the rural campus also whenever required.

3. Participation in community spinning, community congregation and wearing of only khadi cloth are necessary after appointment.

Application on plain paper giving full details of curricular vitae may be sent. Only those applicants possessing minimum qualifications of the U.G.C. will be considered for interview. Last date for receiving application is **12.10.87**.

V.R. Tripath
REGISTRAR

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157

University News

ONDAY, OCTOBER 5, 1987 Rs. 1.50

Open Letter from UGC Chairman

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CD-ROM
Application to University Libraries

●

Indian Educational Scene

●

Research Grants

●

INSA Bursary Grant

CLASSIFIED ADVERTISEMENTS

ANNAMALAI UNIVERSITY

ANNAMALAINAGAR

Notification No. 11/87

Applications are invited for the following posts in various faculties of this University.

Sl. No.	Name of the Post	No. of Post
	Faculty of Agriculture	
1.	Professor of Horticulture	1
2.	Professor of Agricultural Botany	1
3.	Reader in Agricultural Chemistry	1
4.	Reader in Plant Pathology	1
	Faculty of Engineering & Technology	
5.	Reader in Chemistry	1
	Faculty of Arts	
6.	Lecturer in Population Studies	2
7.	Lecturer in Political Science	1

Qualifications

For Sl. No. 1

A person with Ph.D. in Horticulture with specialisation in Pomology with ten years of experience in teaching/research.

r Sl. No. 2

A person with Ph.D. in Plant Breeding with ten years of experience in Teaching/Research.

For Sl. No. 3 & 4

A person with Ph.D. degree with five years of experience in Teaching/Research in the subject concerned.

For Sl. No. 5

A person with good academic record with a Doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) Production of teaching materials.

About five years of experience of teaching and/or research provided that atleast three of these years were as Lecturer/or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

For Sl. No. 6 & 7

(a) A person with a Doctor's degree or research work of an equally high standard, and

(b) good academic record with atleast second class Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Scale of Pay

Professor : Rs. 1500-60-1800-100-2000-125/2-2500 with admissible allowances.

Reader : Rs. 1200-50-1300-60-1900 with admissible allowances.

Lecturer : Rs. 700-40-1100-50-1600 with admissible allowances.

These scales of pay will be revised on the basis of the recommendations of UGC shortly.

Candidates invited for interview for the post of Professor will be paid a single first class to and fro railway fare and for the post of Reader a single second class railway fare.

Those who are in service should route their applications through proper channel.

Application forms can be had from the undersigned on payment of Rs. 10/- by Cash/Money Order/Postal Order (not refundable). Filled in applications (with 5 additional copies) should reach the undersigned on or before **19.10.87**.

R. Rajamanickam
REGISTRAR

LECTURER IN CHILD DEVELOPMENT

Wanted for the SNDT College of Home Science, Poona, One Permanent, One Temporary (Eng/Mar) Lecturer in Child Development having minimum qualification of M.H.Sc. in Child Development; Or B.H.Sc. in Child Development and M.S.W. in Social Work/M.A. in Psychology.

Salary Scale: Rs. 700-40-1100-50-1300-Ass-50-1600 + admissible allowances.

Apply on or before 15 days from the date of its advertisement in the Prescribed Forms, available at SNDT WOMEN'S UNIVERSITY, 1 Nathibai Thackersey Road, Bombay-400 020, on payment of Rs. 5 (by M.O./Indian Postal Order/in Cash).

ASSOCIATION OF INDIAN UNIVERSITIES

AIU House, 16 Kotla Marg
New Delhi 110002

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UNIVERSITY NEWS

VOL. XXV OCTOBER 5
No. 40 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor:
SUTINDER SINGH

CD-ROM Application to University Libraries

T.K.S. Iyengar*

The introduction of the CD-ROM (Compact Disk, Read Only Memory) is the best thing to happen to libraries. Compact disks are being offered as a means of solving information access and storage problems. Data base producers are providing segments of their data on DC-ROM either directly or through suppliers such as DATEXT or Silver Platter. Disclosure is one of the first data base producers to make their information available on DC-ROM in a form that will appeal to both the experienced online searcher and to the first time user.

The actual impact of technology is complex and often very different from what was predicted; for every example of a positive consequence, there are negative concerns. Physicist Niels Bohr once said, "It is difficult to predict; especially about the future".

For librarians or information scientists, on the other hand, working with evolving technologies is not a new experience. In the 25 centuries of their history, libraries have always adapted to technology, and in more recent times, even pioneered it. Developments of SDI data bases are the right examples. Actually it has created opening for other professions to enter into this profession.

Viewed through the eyes of an information scientist, libraries have gone through a rising and falling pattern of influence largely in response to change in information technology. As long as books were expensive artefacts, libraries were crucial to the preservation and transmission of knowledge. The reader had to come to the book. Surprisingly, the invention of the printing press was a mixed blessing. It cheapened the cost of books enormously and made it possible for readers to have private libraries and for books to be sold and bought as ordinary objects. In part, libraries lost strategic place. This lasted as long as the number of writers and readers remained modest, especially the latter.

With increased writing for publication, particularly of things with lasting value such as science and philosophy, libraries became crucial again, more so because they organised knowledge than stored it. When the spread of literacy greatly increased the number of readers, popular libraries made it possible for the masses to share books too expensive for individuals.

Information Support Centres

The library of the not-too-distant future will be an information support centre. It will not be a museum or archives sitting out the print era where collecting is an end in itself. Librarians have long been undervalued, their work treated as routine and their skills unrecognised and underutilised. The image and salary of librarians suffer.

In future expert systems, leading edge of the new information technologies, offer librarians an exciting area in which to carry on their profession to a higher level of achievement and recognition. The simplest way to imagine the demands users may make, and the response of the

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**Librarian, Indian Institute of Science, Bangalore 560012.*

information system is to briefly show how information will be accessed during, for example, research and publishing activities in the new age. Information searching techniques have developed.

The selection, sorting and organisation of relevant information is a special process. This is called SDI or Selective Dissemination of Information.

SDI is done by an automated storage and retrieval method with the aid of a computer. Improvement of scientific communication is sought through this method of machine-assisted dissemination to seek new information. This service system is characterised by a vocabulary or pattern of key words. This pattern is then compared with the vocabularies or profiles characterising each participant of the service. If a given degree of similarity exists between the two, the affected participants are notified by an abstract.

The recipient signifies whether the information is in fact relevant or not by returning a stub provided with the abstract. His affirmative response, which may include his request for a copy of the document is reflected on his profile by incorporating the pattern of the accepted item. Profiles are kept current by discarding patterns after they have reached a certain age. The feedback includes notification of authors as to the reception of their work,

New Professional Role

The influence of technology has also been in how we do our work in what we do. In other words, we have tended to think in terms of discrete changes in our work perhaps requiring specific training but not a rethinking of our functions or of our place in the larger knowledge system and information society.

The computer, complemented by other technologies, such as video-discs, telecommunications and high-resolution graphics, constitutes an entity that can be labelled as 'information machine.' Just as automobiles have various options and come in a range of sizes and prices, so do information machines.

CD-ROM

CD-ROM represents an exciting breakthrough in information storage technology. It is a new publishing medium, the centre of a new genre of computer applications and an educational tool of unprecedented power. CD-ROM is the first practical product to enable almost any company to package and sell and anyone to buy and directly use, very large digital data bases.

Each CD-ROM disc can carry at least 550 megabytes of digital data, with accuracy and reliability as good as those available with the best computer peripherals. This is enough to hold :

- The text content of 150,000 printed pages (enough to fill 250 big books);
- Sharp images of 15,000 pages of business documents (enough to fill two filing cabinets);
- The contents of 1,200 standard 5.25-inch floppy disks;
- A crisp colour picture and 10 seconds of narration for each of 3,000 segments of an educational or reference programme (almost 8 hours of content);
- Large amounts of anything else which can be represented digitally; or any combination, in any proportion and order, of any of the above.

Capacity is just beginning. Any piece of this vast array of information can be located within one second of asking for it. Retrieval can be supported by your choice of power computer methods, starting with data base management systems and full-text searching systems. Precompiled indexes for either or both of these can be stored on the CD-ROM along with the data base itself.

For the librarians, the CD-ROM (compact disk-read only memory) open breathtaking possibilities. For now at least, the mechanics of access, transmission, reproduction and pricing are, in principle, solved. The focus of librarians can return to the information itself—the message rather than the medium—if that distinction is still possible.

A CD-ROM disc is 120mm (about 4.72 inches) in diameter, 1.2mm thick and has a hole 15mm across in the centre. For example, when CD-ROM delivers main frame-sized databases to desk tops, some mainframe-like issues arise. Information providers may choose to regulate success.

Information professionals and library patrons want and need different features from online catalogues. Patrons need systems that are intuitively easy to learn and easy to use. They do not need many features

16 OCT 1987
C. F. T. R. I., MYSOR

INDIAN EDUCATIONAL SCENE

A FEW RANDOM THOUGHTS

Joginder Kaushal*

It is a happy sign that for the first time, after forty years of independence, a concentrated attention is being paid to education. Prime Minister Rajiv Gandhi's pointed reference to setting up of the Open University and delinking jobs from degrees in his first policy statement symbolises the nation's concern for putting our system of education on the rails. As promised, the Govt. of India subsequently set up Indira Gandhi National Open University (IGNOU) which is the most prestigious seat of higher learning through distance education and is most likely to monitor distance education in Indian Universities.

It is a truism that our universities are, year by year, adding to the ranks of the unemployed. "A hungry man is an angry man" goes the old adage, but if this hungry man also happens to have a degree of enlightenment that education brings, he can pose a great danger to the society at large, as is the situation today. It is right time, therefore, for us to turn to education with a surer command over our policies and planning.

Teaching-Learning Arrangement

Ever since the dawn of creation teaching-learning as an occupation has been going on, in one form or the other. The arrangement that operates today in our educational institutions, I am afraid, is not what it should be. Second hand knowledge collected from here and there is drilled down the minds of young students, it is a mere imparting of information. Teaching-learning is a bi-polar process and interaction between two minds, the comparatively full mind operating on a relatively fresh mind. Teaching is supposed to be a nation building activity. Nations are not known for their sky scrapers, ICBMS, nuclear and thermonuclear weapons, their jet airliners or a vast array of luxury gadgets alone but they are more known by the quality of minds of its citizens.

Learning in order to be worth something has four distinct levels :

(i) autonomous level;
(ii) memory level;
(iii) cognitive, assimilative or understanding level;
(iv) reflective level

As to the first, it is self-explanatory. Great Gurus, renowned philosophers like Arvind, noted writers like Shakespeare and Tagore never had formal degrees and yet their utterances have revolutionised the world. At best what can be said about them is that their **kundalini** was awake right from the basal to **Sahansra chakara** level so that after having risen to the super conscious state, they set out to change the face of the world. Any further elaboration of it is outside the scope of this paper. Memory level is an ordinary level where a student crams up his course material and manages to get a pass. It is the third and the fourth levels—understanding and reflective—which are the highest levels of learning. No learning can be possible without teaching which must be sufficiently effective to see the learner operate at these levels. Let us not forget that of all jobs in the world, teaching is, perhaps, the most difficult because teacher in the classroom is addressing a crowd, belonging to different socio-economic backgrounds, mental and emotional makeups and diverse kinds of life experiences. Apparently sitting in a classroom the learners do present the semblance of oneness; they are motivated by a common purpose; they have a common place to sit, in pursuit of common goals, but in reality each one of them happens to be an island unto himself, "plurality of solitude" as Jean Paul Sartre, the existentialist philosopher would call it.

It is this island which a teacher is called upon to make an integral part of the continent, a nation. But unfortunately instead of doing that we are sending them out with degrees in hands, each an island unto himself. What we are producing is public not a people. Melville, the famous American novelist, defines the two; for him public was a monster with its head that of a Jack ass, its body that of a baboon and its tail that of a scorpion. People on the other hand are those who are endowed with a "unified national consciousness". It is unfortunate that our education has not imparted this unified national consciousness to us that is why we are Assamese, Bengalis, Madrasis or Punjabis first and Indians later. Apart from teaching them their syllabi,

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**Director, Correspondence Courses,*
Punjabi University, Patiala-147002.

courses of reading, etc., teaching-learning process is also to make them better citizens which unfortunately has not been done if we look to the rampant corruption in all walks of life around us. How come that Japan which was completely annihitated around the dates we got our independence i.e. in forties is today one of the leading nations of the world in terms of science and technology. Her per capita income of $20 in 1945 shot up to $12000 in 1981 and is till on the increase. This is not to deny the progress we have registered in a few fields. We have built up modern civilization, but have thrown all our values down the drain.

Teachers' Training

There is no denying the fact that first rate quality of education can be imparted by first rate teachers. Education Commission set up by the Government of India about 20 years ago, in its recommendations sounded a clarion call, "investment in teacher education", said the Commission, "can yield rich dividends because the financial resources required are small when measured against the resulting improvements in education of millions". It is rather painful to see that there is no satisfactory arrangement for pre-service and in-service training of teachers, both at the elementary level and the secondary level. There is absolutely no arrangement for this training at the college and the University levels. Fresh from the colleges and Universities, the students straight enter the classrooms in the colleges and the universities as teachers. And in a large number of cases they make a mess of it, if they don't have the necessary makings of a teacher in them. The situation as it operates today is that people just drift into this profession without basic pre-requisites, proclivities, leanings, personality, expression in the case of teachers teaching in the schools or colleges or without mastery over the written word if they have to teach in schools of correspondence education. It is very necessary that a competent teacher must be spotted out immediately after the 10+2 level and then training given to him so that he is thoroughly equipped to cope with newer technologies and expertise which are characteristics of the present day system of education. It may be recalled that the National Policy on Education 1986, duly adopted by the Government of India, recommended that :

(a) the emolument and other service conditions of the teachers should be adequate.

(b) Teachers' academic freedom to pursue and publish independent studies and researches, to speak and write about significant national and international issues should be protected.

(c) In-service teachers' education should recevie adequate attention.

Whereas there has been a marked difference between their emoluments and service conditions, adequate academic freedom and in-service teachers training have not been given to teachers as was the intention of the National Policy on Education. There has taken place an explosion of knowledge. Yesterday's theories have become outdated today. Thus re-education or continuing education of teachers is essential. Syllabi, curriculum and courses of reading have got to be updated. The teacher has to keep himself academically alive and up-to-date.

All this presupposes that adequate financial resources must be placed at the disposal of all schools, colleges and universities, schools in particular should try to buy latest journals and other writing-material which in itself may not mean anything unless teachers are strongly motivated.

Naturally this obviates a judicious selection of teachers. They should be recruited on purely academic considerations. I have already touched this point in the beginning saying that teachers ought to be spotted out at the end of the 10+2 level and so trained that they can make use of countless teaching techniques, employed these days such as simulation, in-basket, micro-teaching techniques, etc.

I suggest the formation of a task force of teachers on the pattern of bare foot doctors. These teachers should be dynamic and of a high voltage. They should be put on errands, always on the move, sort of itinerant teachers like we have Visiting Professors in our Universities. It is necessary that this pick and cream of the teaching community will be given adequate protection against their being elbowed out by mediocrities. A top grade teacher here is a top grade teacher at any place. Such an exchange of teachers apart from providing necessary inspiration to students will also perhaps further the cause of national integration which is woefully lacking in our country today. Educational Television (ETV) if pressed into service and an independent channel provided for educational purposes can be a substitute for this kind of itinerary movement, though not a very stable substitute. This observation is based on the assumption that those you like, you want to see and those you want to see you want to be face to face with.

Examination Reforms

Our examination system, a legacy of the British, still continues to be as it was handed down to us by our alien masters. A select body of competent educationists debated a few months back in my University the possibility of introducing 100% internal evaluation in order to avoid the pitfalls of our examination system. Perhaps it will not be in good taste for me to spell out what I have seen for myself going on in the Examination centres. Whenever I get a chance to inspect an examination centre, I come back shocked. I will not say for fear of being dubbed as a traitor that copying in the examination centres takes place not without the connivance of the supervisory staff which it is a matter of agony to observe belongs to the fraternity of teachers. Perhaps it was to ward off such vagaries that eminent educationists advocated the introduction of 100% internal evaluation so that a greater degree of responsibility could be given to the teacher to evaluate the performance of his own wards, providing adequate inbuilt system of checks and balances and making it fool-proof. Somehow neither the students not the teachers liked this idea. Why our teachers don't want to have this responsibility or our students rely on their teachers is so disturbing to think about. This is no argument that an experiment should not be tried simply because it is likely to be a flop or no powers to be given because they are likely to be misused. Cases of misuse can be judged on merit. I am sure properly trained teachers with a high scale of moral values can evolve a newer society if they believe in the famous saying, "physician heal thyself first".

Depoliticization

I come now to the most difficult part of the infrastructural improvement—the depoliticization of educational institutions (bodies, unions, etc.). In all our educational institutions there must be provided an adequate machinery to look into the grievances of teachers and students so that they could be looked into at the very initial level. No body will think of trade unions if he or she is assured of a happy future. It is a demon, the wolf on the door that keeps haunting him. Our students know that from here they are going into nowhere. So they think in terms of politics. Whereas the menace is not very alarming in our primary or secondary schools, it is assuming serious proportions in our colleges and universities, both at the teachers' and the students' levels.

I must feel bold in saying that politics in the Universities begins first with the appointment of Vice-Chancellors, when these appointments are made on consideration other than academic. In the appointment of the Vice-Chancellors the government must be guided by the man's academic excellence, administrative ability, his day to day style of functioning, degree of acceptability among teachers and students, his imaginative vitality and innovative mind. I would suggest that every Vice-Chancellor should be given five years term and no further extension unless it is in very exceptional cases. Also a word to political parties : they should treat educational institutions as a prohibited area for them and desist from encouraging students' wings as affiliates of their political parties.

New Pattern

As to the issues of infrastructure being extended to the structuring of education at and beyond 10+2 level, it needs to be pointed out that the new pattern of education i.e. 10+2+3 is the outcome of the deliberations of the Education Commission (1964-66). The report of the said Commission was published under the rubric,

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A Weekly Chronicle of Higher Education

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"Education and the National Development". Perhaps it will not be out of place to recall that this kind of restructuring was first recommended by the Calcutta University Commission (1919). Therefore, there seems to be nothing new in this idea. What is amazing is why this should not have been tried all these years. The National Education Commission Resolution (1968) laid stress on

(a) Economic upliftment ;
(b) Cultural development ;
(c) Promotion of National Integration; and
(d) Setting up of Socialist Democratic order.

It is high time that we tried these innovations if we want to impart a peculiarly Indian flavour to our education system. This scheme envisages 10 years of schooling in General Education for all and sundry, another two years again in the school for determining whether the learner has to go beyond 10+2 stage, towards the academic or towards vocational education. It will be appropriate if, as I suggested earlier in this paper, at the terminal of 10+2, the learner is guided on to where his inherent potentialities direct him. Apart from minimising the heavy rush of admissions to the colleges and universities, it will bring about a greater degree of ciency and competence in the area which a student chooses as his own field. If still some students feel that they can earn and learn simultaneously, then we should strengthen our distance education centres or Schools for Correspondence Education. In any case it is time we remove the cobwebs from around our educational policies and try innovative techniques. I find a great substance in what the Education Commission (1964-66) recommended more than two decades ago. "It is never too late to seek a newer world." ☐

CD-ROM
Application to University Libraries

(Continued from page 2)

that professionals require and are willing to learn. System support, documentation, training—all these differ significantly depending on whether the system is 'behind the counter' or 'out-front.'

Given the fluid environment in India of CD-ROM for 1987, what seems to make the most sense will be small well thought-out pilot projects. The basic objectives of such projects should be to understand the technology and to identify and analyse the problems of making it work in the library.

One straightforward project might be to acquire one system and one product and use it experimentally for a while. For example, library corporation's biblio file can be delivered for less than Rs. 40,000. That price includes a CD-ROM drive with an interface to an IBM PC, operating software, a year's worth of quarterly updates. Libraries in India ready to take the plunge, should take it.

For example, a library cooperative might elect to publish a union catalogue of special collections on CD-ROM. One or more integrated systems could be purchased from a vendor. Several service-bureau-like sources of assistance are available to assist with creating and producing the CD-ROM disk product themselves. They are feasible and affordable now.

Ours are the times that try human vision. It is difficult to tell where we are, much less where we are headed. Saying that we are passing from an industrial to an information economy overstates the case. Our industrial base remains as important as ever. It is just that we are learning to work smarter; the information value-added component of production is increasing.

Another example of CD-ROM is that information, document and databases which only yesterday required mainframe storage and handling are now decanted on to a plastic disc weighing less than an ounce and measuring less than five inches across.

The new role for the library and librarian is an enhanced one that will be highly visible to scientists and engineers. The small bulk, low cost, enormous storage capacity of CD-ROM has forever altered that situation. CD-ROM, a version of the laser or optical disks libraries have already seen in biblio file is formated for digital data recording. With all the software expertise in India, what are we waiting for ? ☐

An Open Letter to Fellow Academics and Friends of Academia

YASH PAL
Chairman, University Grants Commission

During the last couple of months I have recalled innumerable occasions when a teacher from a foreign university has cut off from a seminar, a conference or an inter-governmental meeting to take an inconvenient flight home to arrive a couple of hours before he/she had to teach a class. No other concern, no matter of State policy, or personal advancement, was more important than taking the class, when it was supposed to be taken. Everyone has a right to disagree, to protest, to campaign, to organise, to argue. Particularly teachers and students...because this is a class of people which should determine the culture of society, help correct its mistakes, and analyse and point out when others are caught up in dead habit, empty rhetoric, or are ignorant about our privileged perceptions. But why, in heaven's name, should our protest take a form of not teaching. As it is we teach far less than any major university in the world, what with holidays, anniversaries—and various other forms of disturbances on the campus. If higher education has an impact on our relative balance with respect to rest of the world, we ought to be working harder than anyone else. I get very upset when I hear sometimes that in many subjects, teaching is really not much use, students can read themselves. Sometimes it appears that some teachers also hold the same view.

Agreement with AIFUCTO

On the 4th of September, we came to an agreement with All India Federation of University and College Teachers Organisation (AIFUCTO). AIFUCTO had called the strike and AIFUCTO, withdrew the strike on the basis of this agreement. In my view this agreement could have been arrived at even earlier, even before the strike, but it seems some events are pre-destined. It may appear that the discussions with AIFUCTO started just three or four days before the agreement. This is not true. I don't remember exactly, but there were something like fifteen direct or indirect contacts, messages and meetings during that one month. The UGC, the Government and AIFUCTO all dispensed with some formal procedures to come to this agreement ...and all this was done in good faith and has not been repudiated by formal mechanisms of the parties involved. One of the important parts of the agreement was that there would be a continuing consultation with the all India teachers' organisation while we address anomalies, if any. The result of this agreement is that the strike has been withdrawn in all the 150 odd universities (a few of which had not gone on strike, or withdrawn it even earlier) except for Delhi University. As an academic I will never place myself in a position where I refuse to talk to any other academic. Indeed I have been doing that, continuously, all over the country. However, how does one formally negotiate with one association on a matter which has been settled in discussion with the All India Organisation—with whom discussions are still open, according to the agreement. One of the important demands of the strike was that the scheme should be uniformally implemented in all the States. The UGC and the Central Government have promised to do their best to ensure that this will be so. How do we, then sit down to discuss something at variance with what has been agreed to for everyone else.

It has been alleged that there may be other interests at work—other than the interests of academics, students and teachers. If this is so, it is a pity. Whichever way our society evolves, in terms of its social and political structure, we will always need the highest quality of thinkers, professionals, scientists and technicians. In the present world a year lost will never be made up.

Implications of the Scheme as it stands now

Please step back a little from your personal feelings of not being treated as well as someone who is a few years older or a few years younger and look at what has emerged.

Every teacher, who has a right to be called a teacher, should be able to progress from lecturer through senior lecturer, in about 16 years, to a scale of 3700-5700.

If judged by a university appointed selection committee as a person who has begun to make some sort of a mark in the world of teaching, learning and research, he/she would be promoted to the above scale and called a Reader.

If the selection committee decides that his/her performance is adequate, but he/she should not yet be called a Reader, (for example in regard to ability to guide research students) he/she can still be promoted and given the Reader's scale.

The selection committee has of course the right to determine that the person concerned is not yet fit for promotion and he/she can continue to draw his/her increments in the senior grade right upto the salary of Rs. 5000.

The scheme envisages as of now that a lecturer should be eligible for promotion to senior scale after 8 years (5 if he/she enters with Ph.D. and 7 if after an M. Phil.). In my view, if it happens that the person concerned does not meet the required criteria at that time or for a couple of years later, he/she could still be eligible for consideration by the selection committee for the 3700-5700 grade after 16 years (13 if he/she entered with Ph. D. and 15 if after an M. Phil) in lecturer/senior lecturer grade. The incentive for becoming a senior lecturer earlier would be a jump in salary of a couple of hundred rupees, and increased increments.

Thus we have a scheme in which practically all valid teachers, in colleges or universities, can hope to reach a top salary of Rs. 5700 by the time they are around 50—and yet have about 10 years of service left. And all through their career, after first 10 years or so, they can apply for open posts of Professor and be placed in the grade Rs. 4500-7300.

In addition to the career advancement possibilities mentioned earlier, there will, of course, remain the faster track open to those who compete for open positions of Readers and Professors created in various universities and colleges. There are two aspects of these important channels. Some young and brilliant teachers perform best if they are recognised early. In addition this is one mechanism available to us to discourage inbreeding and to ensure that talent from different institutions and different parts of the country is mixed and dispersed. Creativity often needs exposure to different schools of thought and learning. I would personally prefer a convention that students of a college or a university should not get their first job in the same college or university. One can't do it legally, but such conventions do exist in some of the best places in the world.

More Posts of Readers and Professors

It has been stated that larger number of posts of Readers and Professors would be created in universities and colleges to broaden this channel of open selection. We have already started discussing this with universities and colleges, and also with teachers' organisations, in order to evolve some criteria for this. One thought which is being discussed is that in departments which have 8 or so staff members, one may create one post of Reader immediately, which can later be adjusted against a temporary vacancy or a retirement. Some mechanisms of this kind would be worked out in discussion with teachers. I am particularly anxious about this, because this would also enhance the opportunities for some of the younger teachers.

Further, I believe that each university should work aggressively to seek out about half a dozen brilliant people every year, independent of seniority, from within the university or without, and ask for special posts to be created for them at an appropriate level.

All this is possible.........and becomes increasingly feasible, if the concern for quality is not sacrificed.

Relative Numbers in different Grades & Flexible Complementing

I have said that our higher education has to have its own character. But some indicators from the outside world are useful to keep in mind—even if we consciously decide to do something different. Time was, when like the German and British universities, our university departments also had a single Professor......and sometimes not even that. Things have changed abroad, and they have also changed here. But even now the average number of Professors in British universities is about 10% of the total teaching staff, while this ratio in some of our universities has increased much beyond that. Indeed in our central university departments, the number of Professors and Readers are about equal and number of Lecturers is less than either of them.

I am not against flexible complementing per se. Indeed in some of our science agencies flexible complementing has been practiced for last 40 years. However, these agencies have 6 or 7 linear scales. Mistakes made once can be corrected. The result is that in institutions with several thousand scientists and engineers the number of people in the top H grade is only of the order of a dozen'. Comparisons are always fallacious when one is dealing with systems with different rates of growth, but the fact must, nevertheless, be taken note of.

Assessment and Evaluation

Present state of rhetoric is such that whenever the word selection or assessment is mentioned, one leaves oneself open to the charge of "bureaucratization". Clearly some mechanism exterior to oneself has to be invoked for assessment. One should participate and aid in this process, but one can't abolish it and convert it into a mere passage of time. What has been proposed is that assessment should be data-based, open and participatory. Learning to be assessed by peers and other academics is part of the culture of academia. Indeed without this, academic work has no valid existence. We have to jealously guard the honesty of the process of assessment. The fact that there have been unfair practices cannot be an argument that assessment can be eliminated. I have requested teacher's organisations to help evolve a mechanism which would be most suitable, but clearly universities themselves are finally responsible for this.

Suspicion about Innovations

At a meeting a few months ago in a major technological university, one of the participants remarked "The arena of educational reform is like a snake farm ; you have to move, but please move slowly". Referring to the difficulties of introducing curriculum reforms, another frustrated academic stated "Introducing curriculum changes is like moving a graveyard ; the dead have many friends". Both of these are rather clever remarks, but the suspicion of things different or new is very real, and valid. On strong recommendation of several academics, a programme of orientation of college and university teachers is being introduced. To those who look at anything new as diabolical, it may be useful to quote from a few remarks I made at one of the five workshops organised by universities to clarify the programme of orientation courses :

"Orientation is not concerned so much with the content of the separate disciplines of the teachers who would come together. It has more to do with developing an appreciation through mutual interaction that in all disciplines there are many vistas, many doors to be opened. There is meaning and excitement in relationships. There are possibilities of overlaps and emergence of new disciplines. There is poetry in scientific theories and deep logic to language. That we are living in a world where the time interval between events is decreasing exponentially and yet, for academics, there can be, and are, deep precious moments when time stands still and one is lost in pure thought or becomes a component of a rich experience. That while much of knowledge in any discipline is universal, it becomes our own when we immerse it in our own fermenting broth and particularise it with our examples, our own metaphor. That we can and should try to relate to each others' work and insights through their disciplines—and simultaneously with the concerns of the country and world at large.

"In addition :

"That we have the special role and joy of helping to create great scientists, artists, poets, philosophers, thinkers—and doers. That we are important, we are special, but also agents for creating new understandings, new insights, new relatedness, new wealth, new joys—and a calm self-confidence. Alongside this we have to develop a true humility—which comes through realizing how little of the knowable we do know.

"And how should we do all this ?

"By sparking interaction amongst the participants—their talking to and telling each other about the meaning and excitement of their field.

"By bringing in others, who radiate the joy of being involved in academic pursuits.

"By putting before them a canvas to which they may add their special colours and hues.

"By sharing with them different glimpses of the emerging Indian identity

"And while we try to do all this and more ;

"Getting them familiar with examples of the mechanics of doing their job : about teaching, testing, grades and scores, and the dangers of over-teach and learning to say, I don't know, I will find out and let you know, but you also try to find out, yourself, or through study and discourse".

A Word on UGC

My close connection with the University Grants Commission is just a year and a half old. I am quite aware of our weaknesses—but I am also aware of our special strengths—and our special character, and the character of the sanction for what we do. The Commission is not like another office where a number of people with authority, responsibility and some wisdom might take decisions for others. The Commission is basically a cooperative of academics which has to fulfil some resposibilities. Practicably all our work is done through panels and committees of a large number of academics drawn from all over the country. I would estimate that about 7000 academics are involved every year, in the process of consultation, assessment, and aspects of policy formulation. Our real wisdom lies in the wisdom of the people we work for. One educational writer has referred to the Commission as an "academic

(*Continued on page 13*)

North Zone Adult Education Conference

The Indian Adult Education Association (IAEA) in collaboration with the Centre of Adult, Continuing Education and Extension Work, University of Jammu, organised the North Zone Conference of Adult Education in Jammu on Sep 8-9, 1987. Inaugurating the conference Prof. Satya Bhushan, Director, National Institute of Educational Planning and Administration said that illiteracy was invariably associated with mass deprivation and socio-economic underdevelopment and all-out efforts should be made to wipe out illiteracy from the country. He said that the constraint of literacy in overall development of a country could be overcome by national commitment at all levels, mass involvement and decentralisation of the process. He was of the view that area-specific and population-specific planning should be the approach now instead of the centre-based approach. This, he said, would include establishing close linkages with developmental programmes, such as those relating to health, nutrition, environmental sanitation, rural development, family welfare, etc.

The success of new approach will greatly depend on the extent the operational part (planning management and monitoring) is decentralised, de-bureaucratised and made participatory and ultimately converted into people's programme. Environment building through media, mass meetings, involvement of social activists, voluntary groups of youth and women can serve as powerful educational inputs. He felt that in order to reduce inequalities and equalize educational opportunities, priority should be accorded to those blocks and areas which are educationally and economically most backward.

Dr. M.L. Lakhanpal, Vice-Chancellor, University of Jammu, who presided over the inaugural function said that adult education was a life-long education and it would still be needed even if 100 per cent literacy was achieved. He said that adult education should result in changing the quality of life.

Over 50 delegates, representing Government Departments, voluntary organisations, State Resource Centres and Universities from the States of Himachal Pradesh, Punjab, Rajasthan, Jammu & Kashmir, Chandigarh and Delhi participated. The important topics discussed at the conference included: mass programme for literacy; women adult education programme and the feasibility of setting up technological demonstration centres under the National Literacy Mission.

Delivering the valedictory address, Dr. S.C. Dutta, President of the Association, said that adult education was not merely an educational programme, but it was synonymous with development. He said that area-approach should be adopted to improve the socio-economic conditions of the people in the area.

Some of the important recommendations made at the conference are as follows:

(1) Vigorous and earnest efforts should be made to achieve the target of elimination of illiteracy in the age group of 15-35 by 1995 as laid down in the New Education Policy.

(2) Modern and traditional medias like film, T.V., Radio, Newspapers, Kathputli, Notanki, Yatras, etc. should be used in motivating the learners.

(3) Provision should be made for rent or a lumpsum grant to put up a shed to tide over difficulties in getting suitable accommodation for the Adult Education Centres. The shed grant should be to the extent of 50 per cent and the rest should be raised from the community.

(4) As envisaged in the New Education Policy and the National Literacy Mission, a Jana Shikshan Nilayam be established in each village in order to ensure greater participation of people, particularly women. The major responsibility for running these Nilayams should be given to voluntary agencies/institutions engaged in adult education and a grant for a minimum period of five years, to start with, given to voluntary agencies for the purpose.

(5) States where there are not many voluntary agencies should foster and encourage voluntary agencies so that they seek people's involvement and cooperation and organise programme for the upliftment of the weaker sections.

(6) Wide publicity should be given to the mass programme of literacy and those interested in the programme should be given the literacy kit free of cost. This will ensure participation of large number of people in this programme.

(7) Noting with concern that grants to voluntary agencies were not released in time thereby affecting the tempo of adult education programmes, the conference recommended that timely funds should be provided to these organisations to help them achieve the target of wiping out illiteracy speedily.

(8) The conference also recommended that adequate funds should be placed at the disposal of the universities so that sufficient quantity of teaching learning material

is supplied to the adult education centres.

(9) Cost effectiveness of technological inputs should be taken into consideration before introducing them in the adult education programme under the National Literacy Mission.

(10) Area approach for integrated total development should be adopted to achieve growth with social justice.

Management Techniques for Information Handling

A course on management techniques for information handling in technical cells in ICAR institutes was recently inaugurated at the National Academy of Agricultural Research Management (NAARM), Rajendranagar, Hyderabad. Inaugurating the course, Dr. K.V. Raman, Director, NAARM, said that self-reliance and self-sufficiency in food production would be the main thrust in the immediate future. To meet the new challenges and exploit the untapped resources, ICAR at present has about 18,000 research projects located in more than 1,400 centres engaging about 7,000 highly qualified scientists. In this endeavour the technical personnel in the Technical cell play an important role in coordinating with the scientists for formulating research programmes, controlling, monitoring implementing, reporting the projects. There is an urgent need to imbibe some management techniques for the personnel engaged in the information cells to meet the demand for providing qualitative information packages and for uniformities in project file maintenance, monitoring and evaluation.

Mr. R.B. Gaddagimath, Course Coordinator, explained the course design and stressed the importance of effective storage and retrieving of information.

U.S. Assistance for IIT Projects

The National Science Foundation in the United States has approved three projects costing over Rs. 1.5 crores to be executed in the Indian Institute of Technology, Madras, in the next three years. The amount will be used to meet the expenditure on research, equipment and exchange of scientists between the institute and the collaborating American universities. The research will mainly be on identified topics of relevance to India and the U.S.

Two of the three projects belong to the Mechanical and one to the Aeronautical Engineering Departments. The project, entitled "Pressurised fluidised bed combustion of low grade coal," will be executed by Prof. V.M. Krishna Sastri and Dr. Ajit Kumar Kolar from the IIT, and Prof. V. Zakkay of New York University (U.S.). The primary objective is to study the efficiency of burning of various types of low grade (light ash, high sulphur content) coals and lignite in a fluidised bed combustor of sand or ash at pressures up to 10 atmospheres.

The second project will enable the efficient use of ethyl and methyl alcohols, hydrogen and biogas as alternative fuels in diesel engines. Another objective is to use alcohol in small, two-stroke engines. The principal investigator is Prof. K.V. Gopalakrishnan from the IIT while his U.S. collaborator is Prof. Richard Pefley of the University of Santa Clara in California.

"Heat transfer in arc welding" is the third project which gives scope for high technology research in the entire area of plasma manufacturing and processing. Prof. T. K. Bose of the Aeronautical Engineering Department of the IIT and Prof. C. J. Cremers of the University of Kentucky are the collaborating scientists.

National Information Centre for Leather and Allied Industries

Dr. G. Thyagarajan, Director, Central Leather Research Institute (CLRI), inaugurated the newly installed micro computer at the National Information Centre for Leather and Allied Industries (NICLAI), CLRI on 10th September 1987. NICLAI is a project under the NISSAT, CSIR, Govt. of India. This microcomputer—a WIPRO PC/XT with 640 K RAM and 20 Mb hard disk drive with a floppy drive and two printers is going to be used mainly for information storage and retrieval applications. Already CDS/ISIS micro version, a Unesco supplied software for information retrieval has been implemented and tested. Several other data base application software packages are being implemented. An abstracting service, SDI service, directory enquiry service and a thesaurus production project are being planned for implementation.

INSA Bursary Grant Scheme

The Indian National Science Academy (INSA) has announced a Bursary grant (non-recurring) to provide one time supplementary support to individual scientists for carrying out research effectively. According to INSA sources, the grant must be utilized for the purchase of equipment (if not available in the laboratory), components and accessories, chemicals and other such items concerned for research and/or to organize a small group discussion of professional colleagues on important aspects of research and development, or any other significant activity related to research. Under no circumstances shall the Bursary grant be used for attending conferences abroad or in India. The Bursary grant will not be periodic or recurring as this is a relatively small amount ranging between Rs. 10,000 to Rs. 20,000 and in exceptional cases upto Rs. 40,000.

Further details and application form for the Bursary grant may be obtained from the office of the Executive Secretary, Indian National Science Academy, Bahadur Shah Zafar Marg, New Delhi-110002.

Ghurye Award for Prof. Oommen

Prof. T.K. Oommen, an eminent Sociologist and Professor of Sociology at the Jawaharlal Nehru University has won the prestigious 'G.S. Ghurye Award', named after one of the founding fathers of Indian Sociology. His book **'From Mobilization to Institutionalization : the dynamics of Agrarian Movement in 20th Century Kerala'** has been adjudged the best published work of the calendar year 1985 in Sociology and Anthropology. The Award shall be presented to Prof. Oommen shortly.

Prof. Oommen is also the recipient of Prof. V.K.R.V. Rao Award in Sociology for 1981.

Prof. Oommen has been an active contributor to the areas of Social Movements, political sociology, rural social transformation, professions and professionalization for the last two decades. Author of numerous research papers in national and international professional journals, Prof. Oommen has six books to his credit. He was the Secretary-General of the XI World Congress of Sociology held in New Delhi last year.

M.Sc. Course for Teachers

The SNDT Women's University is reported to have introduced a new post-graduate course in science leading to M. Sc. (Chemistry) degree, exclusively for science teachers.

The curriculum of this two-year course includes all four branches of chemistry, namely, organic, inorganic, physical and analytical with fundamental concepts treated at postgraduate level.

UGC Assistance for Osmania Varsity

University Grants Commission (UGC) has sanctioned Rs. 1.14 crores to Osmania University College of Engineering and Technology under Seventh Plan proposals. This grant will be utilised for strengthening the existing teaching and research facilities in the engineering and technology faculties.

We Congratulate . . .

(1) Shri Ramjilal Sahayak who has been appointed as Vice-Chancellor of the Bundelkhand University, Jhansi.

News from Agril. Varsities

Farm Research & National Progress

Mr. Yogendra Makwana, Union Minister of State for Agriculture inaugurated the national symposium on "the role of scientific research and its management in accelerating socio-economic transmission" organised by the Agricultural Research Service Scientists' (ARS) Forum at IARI, New Delhi. Mr. Yogendra Makwana reminded the scientists that although the agricultural research had contributed its share in the national progress, it has to play a more important role in future. He complimented the ARS Scientists Forum for being alive to this responsibility and organising the national symposium.

The Minister urged the scientists to shape technology that would not disturb the socio-cultural fabric of the client system. Advances in agricultural research, the Minister observed, not only made the country self-reliant in food but also succeeded in generating rural employment and reasonable equity in income distribution.

Referring to the future role of ARS Forum of Scientists, the Minister wanted them to take a mission oriented approach in planning and conducting research.

Dr. Y.P. Singh, President of the ARS Scientists Forum highlighted how Indian Agricultural Research gave higher returns in the past than the agricultural research even in America. He asserted that no other sector in Indian science could claim such credit.

World Food Award for Swaminathan

Dr. M. S. Swaminathan, Head of the International Rice Research Institute, Manila and one of India's leading agricultural scientists, has been selected for the first 'General foods world food' prize for his outstanding contributions toward improvement of quality and productivity of Asia's staple food, rice. The prize comprises a cash award of 200,000 dollar and a commemorative sculpture.

The "General foods world food" annual prize is being instituted this year with the objective of honouring men and women, whose work bear importance for the world food supply.

News from Abroad

Research Grants for Chemistry

The Royal Society of Chemistry, London, operates a Research Fund to provide financial assistance of upto £ 300 to members for the purchase of Chemicals, equipment or for running expenses of chemical education research. Primarily intended for those working in Universities/polytechnics/colleges outside the UK, preference will be given to those working in less well-endowed institutions. A limited number of grants, each of approximately £ 300, are available for 1988 and the applications from Society's members will be considered on merit.

For members in the developing countries, additional funds have been made available for 1988 by the Society's International Committee and preference will be given to those who would be able to cite collaborative research projects with UK institutions.

Application forms and other details may be obtained from Mr. S. S. Langer, The Royal Society of Chemistry, Burlington House, London WIV OBN (UK). The last date for applications is 1st November 1987.

Sports News

Air Force Jobs for Sportsmen

The Government has announced certain relaxations for Air Force Jobs for Sportsmen.

Merited sportsmen will be allowed relaxation in age and qualification for recruitment to the Indian Air Force. Under a special scheme evolved, Matriculation qualification could be relaxed to eighth standard pass.

Distinguished sportsmen in age group 16-22 will be ranked Sergeant after successful six-month training. Trainees would be given Rs. 850 per month. Those excellent in sports and games will be promoted out of turn. For further details, contact the Secretary, Air Force Sports Control Board, New Delhi (Race Course)—100 003.

An Open Letter to Fellow Academics and Friends of Academia

(Continued from page 9)

cripple", because we usually stop at issuing guidelines and do not give detailed instructions like an autocratic bureaucracy, or because we do not take rigid stands opposing prerogatives of State legislatures or insist on our particular brand of wisdom because we recognise that other brands are equally valid. But we also need to change. Perhaps we are changing, because we are also being accused of "activism", which to me indicates that we may be beginning to move in the right direction. Our "activism" is also derived from the activism and impatience of a large number of academics—teachers, researchers, students.

General

My passion is to help infuse a renewed vigour in our higher education system. We cannot be a copy of anyone else's system. A part of the agenda is similar to that of all important universities of the world—but much else is our own. In a country so full of linguistic and cultural richness, such social and economic disparities, with needs of self-reliance in agriculture, science and technology, with challenges which are at once, local, national and global, our special underlying preoccupation with personal and philosophical values, our own past, present, and hopefully our own future, the quality and character of our higher education will have to be our own. Many other things may be more important for the present, but what we do in higher education will determine what kind of a people we become. No one should write detailed recipes and give prescriptions—because no one is wise enough—and time is so dense these days. But what is required is a new exuberance—discrimination and quality—ensured through assessment and monitoring by jealous academics who will not compromise—and not let others compromise—on the criteria of excellence.

There is a great deal we need, in order to do our work properly and with the intensity we are capable of—but we have also to manage what we have, quite a bit better, than we do. We need far better libraries and laboratories—and places for teachers to sit, work and study. We should work for that and try to get them. We have to work together to see that political and other non-academic interference in running the education system is eliminated. But academics also collude. Management of colleges and universities should be primarily in the hands of academics —and should be for academic purposes; this also we need to work for. In social scientific, cultural and technical terms, we have to move centre stage. There is so much to be done—and so much personal fulfilment to be sought while doing it—that we cannot just wait around, even if we have to protest. Let us move forward in a true partnership of all concerned.

29.9.1987.

National Conference on Role of Universities in Implementation of New Education Policy

The Association of Indian Universities will organise, in collaboration with Osmania University, a National Conference on Role of Universities in Implementation of New Education Policy on December 18 & 19, 1987 at Hyderabad.

The **New Education Policy** (NEP) visualises the role of higher education as providing people with an opportunity to reflect on the critical, social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills.

The role of universities is crucial in the matter since one of the important functions of universities and institutes of higher learning is to provide specialized scientific and technical skills, imparting of knowledge, contributing to every sector of national development and improving social conduct and behaviour. Thus, a major share of responsibilities, as envisaged in the NEP, rests with the universities and other educational institutions. It becomes imperative for the educational community to try to define some of the important issues involved in the management of higher education, the efficiency improvement, the financing of higher education, youth services and physical fitness programmes, education in human values, etc. in the light of the NEP recommendations.

The deliberations of the conference will focus on the following topics :

I. **Management of Higher Education**
- Consolidation and Expansion of Institutions
- Autonomous Colleges and Departments
- National Apex Body and State Councils of Higher Education

II. **Improvement in Efficiency**
- Teachers Training
- Restructuring of Courses
- Research and Extension
- Evaluation and Examinations

III. **New Strategies in Higher Education**
- Evaluation and Accreditation of Institutions
- Youth Services, Sports and Physical Fitness Programmes
- Distance Teaching/Learning
- National Testing Service
- Rural Universities
- Education in Human Values

PROGRAMME

December 18, 1987 (Friday)	
10.00 A.M.	INAUGURATION
11.30 to 1.00	SESSION I
2.00 to 4.30	SESSION II
December 19, 1987 (Saturday)	
9.00 to 11.30 A.M.	SESSION III
12.00 to 1.30	SESSION IV
2.30 to 4.30	SESSION V (Plenary)

Participation

The participation to the conference can be either in the form of presentation of a paper or through discussion. The participation to the conference is open to individuals belonging to universities, research institutions, Govt. and non-Govt. organisations involved in planning and development of higher education.

Registration Fee

Each delegate is required to pay a non-refundable registration fee of Rs. 400 through a bank draft in favour of the Secretary, Association of Indian Universities, New Delhi. The fee includes accommodation conference papers and meals during the conference dates, December 18 & 19, 1987.

Last date for receipt of registration fee alongwith registration form (to be filled in duplicate) is **October 15, 1987.**

Venue

The venue of the conference is Osmania University, Hyderabad, A.P.

Language

The official language of the conference will be English.

Receipt of Papers

The papers (Typewritten and in duplicate) should reach the Convenor not later than **October 15, 1987.**

Convenor

Dr. V. Natarajan
Project Director (Exams.)
Association of Indian Universities
AIU House, 16 Kotla Marg
New Delhi 110 002.
Telephone : 3310059
Telex : 31-5578 AIU IN
Telegram : 'ASINDU'

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

CURRENT DOCUMENTATION IN EDUCATION

A List of Select Articles Culled from Periodicals received in AIU Library during September, 1987.

EDUCATIONAL PHILOSOPHY

Kratochwil, Leopold. The concept of education from the perspective of action theory. *Education* (35), 1987, 24-25.

Regenbrecht, Aloysius. Education theory and political action. *Education* (35), 1987, 7-23.

EDUCATIONAL PSYCHOLOGY

Kyriacou, Chris. Teacher stress and burnout : An international review. *Ednl Res* 29(2), 1987, 146-52.

EDUCATIONAL PLANNING

Anand Sarup. A retrospective view of formulating a New Education Policy. *New Frontiers Edn*. 17(3). 1987, 14-24.

D' Souza, Claude. Education of the weaker sections. *New Frontiers Edn*. 17(2), 1987, 18-27.

EDUCATIONAL ADMINISTRATION

Altbach, Philip G. Politics and the university : Rethinking higher education in India. *Change* 19(4), 1987, 56-63.

Floud, Jean. Universities and Government. *India Intl. Centre Q* 14(1), 1987, 81-90.

Kelly, Noel H and Shaw, Robin N. Strategic planning by academic institutions—following the corporate path ? *Hr Edn* 16(3), 1987, 319-36.

REPORT OF the Expert Committee on autonomous colleges. *New Frontiers Edn* 17(2), 1987, 68-99.

CURRICULUM

Sjoberg, Lennart and Dahlstrand, Ulf. Subject matter attributes and study interests in post-secondary education. *Hr Edn* 16(3), 1987, 357-72.

TEACHERS & TEACHING

Brufee, Kenneth A. The art of collaborative learning : Making the most of knowledgeable peers. *Change* 19(2), 1987, 42-7.

EDUCATIONAL RESEARCH

Anderson, Lorin W and Burns, Robert B. Values, Evidence and mastery learning. *Rev Ednl Res* 57(2), 1987, 215-24.

Sudame, G.R. Qualitative research methods : Certain methodological issues and problems. *New Frontiers Edn* 17(2), 1987, 45-52.

EDUCATIONAL TECHNOLOGY

Boulet, Marie-Michele. Educational software design using a diagnostic approach. *Computers & Edn* 11(3), 1987, 219-27.

Bump, Jerome. CAI in writing at the university : Some recommendations. *Computers & Edn* 11(2), 1987, 121-133.

Collier, Henry W. and others. Microcomputers : A successful approach to teaching business courses. *Computers & Edn* 11(2), 1987, 143-8.

Galvis, Alvaro H. Educational computing technology transfer : Towards a non-magical approach. *Computers & Edn* 11(3), 1987, 197-204.

Rambally, Gerard K and others. Human factors in CAI design. *Computers & Edn* 11(2), 1987, 149-53.

Raymond, J. The computerized overhead projector. *Computers & Edn* 11(3), 1987, 181-95.

Wu, Chih and Yu, W.R. Potential application of CAI in China. *Computers & Edn* 11(3), 1987, 211-13.

EVALUATION

Dockrell, W.B. Recent developments in assessment and examination procedures in Scotland. *Studies Ednl Eval* 13(1), 1987, 49-60.

Gattullo, Mario. Marketing strategies in Itlay. *Studies Ednl Eval* 13(1), 1987, 43-7.

Krieken, Robert Van. Marking and examinations in the Netherlands. *Studies Ednl Eval* 13(1), 1987, 35-42.

Rudman, Herbert C. Testing and teaching : Two sides of the same coin ? *Studies Ednl Eval* 13(1), 1987, 73-90.

Tamir, Pinchas. Marking strategies of student tests in Israel with special reference to an innovative marking procedure of practical tests. *Studies Ednl Eval* 13(1), 1987, 91-103.

Withers, Graeme. From marking strategy to assessment procedure : A review of recent Australian practices. *Studies Ednl Eval* 13(1), 1987, 7-19.

ECONOMICS OF EDUCATION

Behrman, Jere R. Schooling in developing countries : Which countries are the over and underachievers and what is the schooling impact ? *Eco Edn Rev* 6(2), 1987, 111-127.

Bowman, Mary Jean. The importance of examining cohort uniqueness in the formulation of human investment policies. *Eco Edn Rev* 6(2), 1987, 67-79.

Eferakeya, Ose A. A model for financing education in a climate of change. *New Frontiers Edn* 17(2), 1987, 1-10.

Hart, Loren. Financing tuition : Are prepayment plans the right answer ? *New Directions Hr Edn* (58), 1987, 53-66.

Jamison, Dean T and Gaag, Jacques Van der. Education and earnings in the People's Republic of China. *Eco Edn Rev* 6(2). 1987, 161-166.

Kaiser, Harvey, H. Capital needs in higher education. *New Directions Hr Edn* (58), 1987, 21-32.

McMohan, Walter W. The relation of education and R & D to productivity growth in the developing countries of Africa. *Econ Edn Rev* 6(2), 1987, 183-94.

Ritzen, J.M.M, Human capital and economic cycles. *Eco Edn Rev* 6(2), 1987, 151-60.

Woodhall, Maureen. Financing student flows : The effects of recent policy trends. *Eco Edn Rev* 6(2), 1987, 195-204.

PHYSICAL EDUCATION & SPORTS

Sharma, P.D. Role effectiveness of physical fitness in sports and physical education. *Prog Edn* 61(12), 1987, 266-9.

VOCATIONAL EDUCATION

Jacob, Plamthodathil S. Values in Management Education. *New Frontiers Edn* 17(2), 1987, 34-44.

ADULT EDUCATION

Guglielmino, Paul J and others. Self-directed learning readiness and performance in the workplace. *Hr Edn* 16(3), 1987, 303-17.

DISTANCE EDUCATION

Kakkar, S.B. Making correspondence education effectiye. *J Indian Edn* 13(1), 1987, 16-21.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Francis, K. Development of education in Travancore, 1817-1947. *New Frontiers Edn* 17(2), 1987, 53-67.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Marine Biology

1. Philip, Rosamma. *Studies on proteolytic bacteria in fish spoilage*. CUST. Dr. P. Lakshmanaperumalsamy.

Biochemistry

1. Agarwal, Sanjiv. *Lipid peroxidation and membrane damage as caused by radiations and chemicals.* Calcutta.
2. Das, Tapan Kumar. *Biochemical and genetical studies on the mutants of Aspergillus species.* Calcutta.
3. Mittal, Richa. *Studies on some plant membrane glycoprotein enzymes : Purification and properties of 5-nucleotidase and acid phosphatase from the membranes of Arachis hypogaea cotyledons*. Roorkee.
4. Raja, Promatha Sankar. *Study of the effect of carcinogen on some of the enzymes in growing chick embryo.* Gauhati. Dr. P. Goswami.
5. Sridhar, N. *Studies on immobilization of beta-galactosidase of Streptococus cremoris (H).* Kurukshetra.
6. Subramanian, M. *Gene expression in eukaryotic cells : Studies on protein synthesis in resting and proliferating mouse embryo cells in culture.* Madurai.

Environmental Sciences

1. Solomon Raju, Aluri Jacob. *The pollination ecology of some Lamiaceae.* Andhra.

Microbiology

1. Kamalaveni, R. *Environmental biotechnology in cyanobacteria : Studies on isolates of Tolypothrix.* Madurai.

2. Krishna Devi. *Carbon metabolism in relation to nitrogen fixation in Azospirillum sp.* HAU.

3. Sharma, Suniti Bala. *Experimental studies on non-specific and immune factors during influenza virus infection.* HP.

Botany

1. Agarwal, Madhu. *Morphological, cytological and cytochemical investigations of some cryptogams and an investigation of some phytoplankton periodicity.* Calcutta.

2. Chaudhuri, Amiya Nimai. *Morphological, anatomical and palynological studies on some members of Boraginaceae.* Burdwan. Prof. S.K. Roy.

3. Ghosh, Santa. *Analysis of leaf-shedding behaviour in different varieties of jute and other fibre yielding plants.* Burdwan. Prof. Salil Kr. Chatterjee.

4. Kargupta, Amarendranath. *Taxonomic investigation on fresh-water filamentous green algae of Birbhum and Murshidabad Districts of West Bengal.* Burdwan. Prof. Pranjit Sarma.

5. Malik, Surendra Kumar. *Studies of athyrium complex in Rajasthan.* Rajasthan. Dr. T.N. Bhardwaj.

6. Mathur, Om Narain. *Studies on induced mutagenesis in cultivated varieties of sesame.* Rajasthan. Dr. D. Singh.

7. Molly, M.J. *Organisation and morphogenesis of the vascular system in Polypodiaceae : An inquiry into the nature of shoot system in vascular plants.* Calicut. Dr. B.K. Nayar.

8. Mukhopadhyay, Anutandra. *Cultural and cytological studies on some green algae of West Bengal.* Calcutta.

9. Pawar, Arun Baburao. *Investigation of follicolous fungi from Maharashtra.* Shivaji. Dr. M.S. Patil.

10. Saini, Babu Lal. *Ecological and physiological studies on the decomposing rice straw in relation to mesophilic micro-organisms.* Kurukshetra.

11. Sharma, Sanjeev Kumar. *Studies on Sclerotium oryzae Catt. on paddy with special reference to its control by cultural and chemical methods.* Kurukshetra.

12. Shivandra Kumar. *Physiology of blast resistance in rice.* Utkal.

13. Sinha, Subodh Chandra. *Ethnobotanical study of Manipur.* Manipur. Dr. D.B. Deb.

14. Syed Aliar Zindha Nainar. *Experimental studies on vanilla.* Calicut. Dr. B.K. Nayar.

15. Tamang, Man Bahadur. *Studies on the nature of shoot production in clonal tea, Camellia sinensis (L) O. Kuntze as influenced by some important cultural practices.* Gauhati. Dr. H.P. Bezbarua and Dr. C.L. Boishya.

16. Yadava, Bal Krishan. *Analysis of variability in garden pea.* Kurukshetra.

Agriculture

1. Amanul Haque. *Studies on the effects of plant growth regulators on the growth and yield of potato.* Gauhati. Dr. C.M. Sarma.

2. Bansal, Ashok Kumar. *Genetic analysis of yield, oil content and their components in Indian mustard. Brassica juncea (L) Czern & Coss under sodic soil conditions.* Kurukshetra.

3. Bhayalal, Singandhupe Ramlal. *Efficiency of nitrogen use under varying soil moisture regimes in rice in sodic soil.* Kurukshetra.

4. Buzarbarua, Aparna. *Studies on the relative growth, development and productivity of certain economic plants.* Gauhati. Dr. P.P. Wamanon.

5. Chamuah, Hara Kanta. *Effect of different phosphatic fertilizers on high altitude rice, Oryza sativa Linn under reinfed conditions.* Gauhati. Dr. P.P. Wamanon.

6. Datt, Shambu. *Studies on nutrition in relation to other orchard management practices in Kinnow, Citrus nobilis X Citrus deliciosa.* YS Parmar. Dr. R.P. Awasthi.

7. Gill, Harnam Singh. *Studies on the evaluation of selected tree species for their tolerance to sodicity and mechanical impedance in a highly sodic soil with particular reference to root growth behaviour.* Kurukshetra.

8. Kadian, Virender Singh. *Relative performance of pigeonpea genotypes with varying plant population/spacings under late sown conditions.* HAU.

9. Saini, Jiwan Prakash. *Studies on the effects of herbicidal doses and irrigation on different varieties of sugarcane, Saccharum officinarum L in Himachal Pradesh.* HP Krishi. Dr. I.S. Chakor.

10. Satpute, Tukaram Gangadharsa. *Study of water allocation in the command area of Jayakwadi irrigation project. Maharashtra.* Marathwada Agrl. Dr. K.D. Rajmane.

11. Shankar Lal. *Analysis of allelism and combined effects of some genes in barley, Hordeum vulgare L. em Bowden.* HP Krishi. Dr. G.S. Sethi.

12. Singh, Rama Shankar. *Studies on factors limiting production in rainfed upland rice.* Birsa Agrl.

Zoology

1. Bandyopadhyay, Samarendranath. *Chromosomal endophenotype of some Indian Anura with reference to C-band distribution and sensitivity of hetero chromatin to induced aberration.* Burdwan. Dr. Samar Chakraborty.

2. Chattopadhyay, Ratna. *Isolation and partial purification of enzyme acetylenalinesterase (E.C. 3.11.1.7) from chick (Galcus Sp.) brain and practical applicatiou in the effect of some anticholinesterase agents on partially purified enzyme.* Burdwan. Prof. D.K. Choudhuri and Prof. C.R. Maity.

3. Chauhan, Ramesh Chand. *Hydrobiological studies of Renuka and Rewalsar lakes of Himachal Pradesh with special emphasis on productivity.* HP.

4. Gojer, Mohan Ebenezer. *Studies on the adipose tissue of mice in experimental uranyl nitrate intoxication.* Shivaji. Dr. V.A. Sawant.

5. Gupta, Ashok Kumar. *Studies on dung-beetles (Coleoptera : Scarabaeidae; Laparosticti) of North West India.* Kurukshetra.

6. Haresh Kumar, B. *Certain non-edible seed oils and fatty derivatives as antifeedants and growth regulators for certain insect pests.* Osmania.

7. Hosetti, Basaling Basappa. *Studies on the use of some important groups of microbes in the treatment of waste waters.* Karnatak. Dr. H.S. Patil.

8. Jain, Prabha. *Hypolipidaemic/antiatherosclerotic activity of certain plant materials.* Rajasthan. Prof. V.P. Dixit.

9. Markandey, Rachna. *Some observations on the ecology of Zebrotes subfasciatus (Boheman) Bruchidae : Coleoptera).* Panjab.

10. Misra, Saryoo Saran. *Studies on the control of green peach aphid, Myzus persicae Sulzer on potato crop with systemic insecticides and assessment of their residues in potatoes.* HP.

11. Neogi, Lakshminarayan. *Haematological and cytological studies on S-180 tumour-bearing mice in response to drug therapy.* Burdwan. Dr. Samar Chakraborti.

12. Patel, M.I. *Ecological studies on the feral pigeons in a tropical urban area.* Saurashtra, Dr. R.M. Naik.

13. Rosy, P.A. *Studies on the weaver ant Oceophylla smaragdina Fabricius (Hymnoptera ; Formicidae) of India.* Calicut. Dr. T.O. Narendran.

14. Rukmini, Chatti. *Some aspects of ecology of helminth parasites of the larvivorous fish, Aplocheilus panchax Hamilton.* Andhra.

15. Saha, Anil Kumar. *Contribution to the study of the comparative morphology of the brain of some hill stream fishes. of North-East India in relation to feeding habit and habitat* Calcutta.

16. Sashadhar Nath. *The fish and fisheries of the Barak River system in Assam, India with special reference to the ecomorphology and distribution of its ichthy of auna.* Gauhati. Dr. S.C. Dey.

17. Sharma, Nutan. *Evaluation of certain plant products for fertility regulation in female albino rates.* Rajasthan. Dr. V.P. Dixit and Dr. D.K. Vyas.

18. Soni, Inderpal. *Teratological studies of phosphamidon : An organophosphate insecticide in Swiss albino mice.* Rajasthan. Dr. Pradeep Bhatnagar.

19. Upender, M. *Studies on some biochemical and histochemical aspects of a fowl parasite, Raillictina echinobothrida.* Osmania.

20. Yadwad, Veerarajendra Basavaraj. *Effect of fenitrothion (0, 0, dimethyl-0-(3-methyl-4-nitrophenyl) phosphorothioate) on the physiology of the castor semilooper, Achaea janata (L).* Karnatak. Dr. V.L. Kallapur.

Medical Science

1. Bhattacharyya, Amitabha. *Studies on spermatozoal membrane properties during maturation.* Calcutta.

2. Dave, Kirtikumar Indrakumar. *A study of certain biochemical components in the viscera of aborted fetuses at various gestational ages and at still-birth.* Baroda.

3. Ghosh, Anantakumar. *Some aspects of studies on antileishmanial compounds.* Calcutta.

4. Gowthamnath, B. *Pineal activity and aging : A study directed to the effects of (a) stressors and (b) sex steroids.* Madurai.

5. Pandya, Dineshchandra Chandulal. *Anti-ulcer activity of Tamra Bhasma.* Baroda.

6. Pasnani, Jyoti Shantilal. *Studies on antihypertensive effect of indapamide.* Baroda.

7. Ramana Murthy, Kolapalli Venkata. *Bio-pharmaceutical studies on nitrofurantain microcapsules and their application as controlled drug release dosage forms.* Andhra.

Veterinary Science

1. Abichandani, Harish Topandas. *Heat transfer correlations for mechanically formed thin film heat exchangers.* Kurukshetra.

2. Agrawal, Ram Gopal. *Some studies on uterine torsion with special reference to its etiology and treatment in buffaloes.* PAU.

3. Aravindan Gnanakan, R. *Effect of restricted and ad lib water intake on physiological reactions, haematological change and energetic efficiency of milk production in crossbred cows.* Kurukshetra.

4 Balaraman, N. *Studies on different levels of aflatoxins in ruminant diets, their effects on gamma-globulins in neonatals and their influence on certain metabolic enzymes.* Kurukshetra.

5. Chawla, Anil Kumar. *Certain technological parameters for commercial production of Yoghurt.* Kurukshetra.

6. Fulzele, Rajeshwar. *Multi dimensional analysis of training programme of Krishi Vigyan Kendra.* Kurukshetra.

7. Mohamed Nagib El-Sayed Ahmed El-Arian. *Genetic analysis of murrah buffalo herds.* Kurukshetra.

8. Palta, Prabhat. *Hypophysial gonadotropic and ovulatory responses to the hypothalamic hormone GhRH in buffaloes.* Kurukshetra.

9. Punia, Balbir Singh. *Influence of dietary energy sources on ruminal VFA production rates and nitrogen utilisation in cattle and buffaloes.* Kurukshetra.

10. Ravinder Singh. *Selection of optimum combinations of early traits for maximising genetic improvement in dairy cattle.* Kurukshetra.

11. Roy, Pranab Kumar. *Optimisation of production efficieney in crossbred cattle through systems analysis.* Kurukshetra.

12. Sahani, Mohan Singh. *Studies on pre and post weaning body weights, growth, survival and fleece weight in native, (Nali and Chokla) exotic fine wool breeds (Rambouillet and Russian Merino) and their first crosses.* Kurukshetra.

13. Sanhotra, Manpal Kaur. *Studies on buffalo milk xanthine oxidase and its possible role in development of atherosclerosis.* Kurukshetra.

14. Shive Kumar. *Preservation of raw milk by lactoperoxidase/thiocyanate system and its utilization for the manufacture of selected dairy products.* Kurukshetra.

15. Thompkinson, Dilip Kumar. *Technological aspects of incorporating vegetable oils for infant food formulations.* Kurukshetra.

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Applications are invited from Indian Citizens for filling up the following posts of Lecturers in the Indira Gandhi National Open University:

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Essential: Master's degree in the relevant subject with at least 55% marks or its equivalent grade and good academic record or an equivalent degree from a foreign University.

Desirable: A Doctor's degree in the relevant subject or research work of an equally high order.

II. Computer Science

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OR

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Eligibility

Only those candidates who, besides fulfilling the minimum academic qualifications in the above, have qualified in a comprehensive test to be conducted by the University for the purpose will be eligible for consideration for appointment as Lecturer.

The details of the comprehensive test as well as places at which such tests would be conducted would be intimated to the candidates at least a month in advance.

Additional Qualification: Experience and proven ability in imparting education through communication media and innovations in distance teaching methods and materials.

Job Requirement: Academic staff of this University will have the following responsibilities:

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5. Undertaking of research-individual, institutional sponsored etc.

Scale of Pay: Rs. 2200-75-2800-100-4000 plus usual allowances as admissible under the University rules.

In addition to pay, the posts carry all allowances as per University rules. Higher start in the prescribed scale may be given in deserving cases on the recommendation of the Selection Committee. In a few cases, the University would be able to provide accommodation. Provident Fund/Pension, Gratuity, Leave Travel Concession, Medical re-imbursement and leave will be admissible as may be approved by the University.

The prescribed application forms can be had from the Registrar, Indira Ghandhi National Open University, YMCA Cultural Centre, Jai Singh Road, New Delhi-110001, on a written request by post and accompanied by a self-addressed envelope (size 13cms x 28 cms) bearing postage stamps of Re. 1.00. Completed application forms alongwith attested copies of degrees, other certificates, mark-sheets, published research articles, experience etc. should reach the Registrar at the above address on or before **2nd November, 1987.** The originals of the above degrees/certificates should be produced at the time of interview.

Some posts of Lecturers are reserved for Scheduled Castes/Scheduled Tribe candidates as per rules. If no suitable candidate is found from SC/ST categories, the posts will be treated as un-reserved and seletion will be made from general candidates.

Candidates called for interview from outside Delhi will be paid single class railway fare to and fro by the shortest route from their place of residence/work.

Canvassing in any form by or on behalf of a candidate will be a disqualification.

Applications received after the last date or without complete information will not be entertained.

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(E) Dy. Librarian : Two Posts : Grad : Rs. 690-1420

(F) Senior Fellow : Yogatantra—One Post : Grade : Rs. 515-86.

Minimum Qualifications for the Post of Professor. (1) Either Eminent Scholar with published work of High quality, actively engaged in research and Ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

(2) Outstanding scholar with established reputation who has made significant contribution to knowledge.

Minimum qualifications for the post of Reader : (1) Good academic record with Doctorate degree or equivalent published work, and active engagement in research or innovation in teaching methods or production of teaching materials, and (2) Five years experience of teaching or research including at least three years as Lecturer or in an equivalent position.

Provided that the requirement contained in clause (2) may be relaxed in the case of a candidate, who in the opinion of the Selection Committee has outstanding research work to his credit.

Minimum Qualification for the Post of Lecturer

1 (a) Doctorate Degree or Research work of an equally high standard in relevant subject; and

(b) Consistently good academic record with first or high second class Master's degree, or an equivalent degree of a foreign University in a relevant subject.

(2) If the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in sub-clause (b) of clause (1)

(3) Where no candidate possessing Doctorate degree or equivalent research work is available or is considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory or organisation, on the condition that he obtains a Doctorate or gives evidence of research work of equivalent high standard within five years of his appointment, failing which he shall not be able to earn furture increments until he fulfils the requirements.

4(a) Marks above the mid-point between the minimum percentage of marks fixed by the University for award of first and second divisions are said to be high second class marks; (b) A candidate having obtained either an average of 55 percent marks in the two examinations prior to Master's degree that is to say Intermediate and Bachelor's Degree Examinations, (irrespective of the marks obtained in any of the two examinations), or 50 per cent marks in each of the two examinations separately, is said to have consistently good academic record.

Librarian : Essential Qualifications—(1) First or second class graduate degree with first/second class Master's degree in Library Science (two years course) or First or Second class Post-graduate degree with First/Second class Bachelor's degree in Library Science (one year degree). (2) At least 10 years experience of editing Manuscripts or practical working experience in some responsible professional capacity in a library of repute. (3) Approved research work experience of working on specific project.

Note : Candidates with Vidyavaridhi/Ph.D. degree will be preferred.

Desirable : (1) Knowledge of English and Hindi (2) Experience of editing Manuscripts (3) Knowledge of Ancient Indian scripts (4) Experience of guiding research work in Sanskrit Literature; and (5) M.A. degree in Sanskrit or Pali or Prakrit.

Age Limit : Between 40 and 55 years on 10.11.1987.

Senior Fellow-Yogatantra : Essential qualifications—(1) First or Second class Acharya in Yogatantra or allied subject or equivalant degree (2) Vidyavaridhi/Ph.D. degree or experience of translation of critical editorial works (3) Atleast two years teaching experience.

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Note : Those who have already applied against advertisement No. 1 and 4 of 1986 need not apply again.

Gyan Bajpai
REGISTRAR

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities. AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension. New Delhi-110055. Tel. 529157

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UNIVERSITY NEWS

VOL. XXV OCTOBER 12
No. 41 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor :
SUTINDER SINGH

Value Orientation in Education

Prof. G. Ram Reddy, President, Association of Indian Universities and Vice-Chancellor, Indira Gandhi National Open University delivered the Keynote address at the National Symposium on Value Orientation in Higher Education organised by Sri Sathya Sai Institute of Higher Learning, Prasanthinilayam on 24-26 September, 1987. The Symposium was jointly sponsored by the University Grants Commission and the Association of Indian Universities. In his keynote address Prof. Ram Reddy addressed himself to two fundamental questions, namely, what is Value Orientation ?, and what are its other relevant features which should be stressed ? Excerpts from this thought provoking address are being reproduced in view of the relevance of the theme to the present day educational scenario.

Prof. G. Ram Reddy

The National Symposium on "Value Orientation in Higher Education" is being organised at a very crucial moment in our national life. While we have been talking about value orientation in education for quite sometime, hardly anything has been done in this field.

It is, however, distressing to note that in the last four decades things have been allowed to drift and Governments and other agencies have remained silent spectators of this drift. Commissions and Committees have been recommending value orientation in education. Realising its importance, the Education Commission said: "While a combination of ignorance with goodness may be futile, that of knowledge with a lack of essential values may be dangerous". Therefore, it stressed that a balance must be struck between knowledge and skills which Science and Technology bring with values and insights associated with ethics and religion. At its best, to quote the Commission, "a search for the knowledge of the self, of the meaning of life, of the relationship of man to other human beings and to the ultimate reality" must inform all our educational endeavours. This was accepted and incorporated in the National Policy of Education in 1968. But all of us know that not much has been done in this area.

It is heartening to note that a few non-Governmental institutions have been taking interest in the promotion of value-oriented education—important among them is the Sri Sathya Sai Institute of Higher Learning. In these institutions stress is laid on five major rubrics which would, in turn, represent a variety of values. They are truth (Sathya), right conduct, peace, love, and non-violence. The Sri Sathya Sai Institute of Higher Learning can therefore be regarded as a poineer in this area. It has first experimented with Bal Vikas Movement and Education in Human Values Programme at the School stage. Now I understand it has taken up the programme of value-orientation in higher education. This would be based on the acceptance of five basic human values.

Fortunately, in the last two years the Government itself has come up with a National Policy on Education with a firm resolve to bring about several changes in the educational system. The national policy also talks about values in education. Unlike in the past when the policy was announced but not much was done to give concrete shape to it, this time after the announcement of the New Education Policy, a concrete programme of action has been chalked out.

This subject has been discussed in several forums and for the sake of clarity, I wish to raise two questions : "What is value orientation ?, and what are its other relevant features which we should stress here ? I shall try to answer the two to the best of my ability. However, I shall not raise the question why of value orientation because it has been discussed at length. Lat me take up the first question first.

Man, we are told, is a social animal. He constantly interacts with others and lives in society. To him, values are the guiding stars which provide a framework for his living. Each society formulates its own values and transmits them to its inhabitants. They may vary from one stage of the development of a particular society to another. Therefore, what were considered to be essential values of a society at one point need not be essential in a different stage of development of that society. **It is good to remember that values are not static and that they have to be realised as values in action from time to time by individuals. Value becomes value only when it is experienced as a value by the individual.** There are a variety of agencies in the society which nurture the individual, which shape his thinking and inform his attitudes. Sociologists tell us that the most important among them are the family, the school, and the society. In other words, these are the agencies which shape the character and conduct of the individual. With the help of these agencies a man becomes a probationer in life. He is on probation in living.

It is in the family that the child begins to learn early values which sometimes govern his entire life. Once the child acquires wrong values at the initial stage, it becomes very difficult to erase them from his mind later on. There are instances of individuals who tried unsuccessfully to out-grow the value-frame in which they are initially brought up. Family, therefore, is an important source of value-formation. Secondly, the individual acquires several values while he is in the school. This is the stage of his youth when his mind is very impressionistic and is responsive to several values. He receives the values from his age group, from his fellow students, the teachers and other elders. The examples of social and political leaders of the time also influence his value formation. Thirdly, while being a member of the society, man, as a social animal, acquires several values throughout his life. In the society he is constantly interacting with others. Then there are also other agents of change like newspapers, radio and television which promote a number of values.

There is a feeling that during the last few years, especially since independence, there has been an erosion of values. Some attribute it to our secular approach which has led to the neglect of religious and moral thought in schools and colleges. Some others feel that westernization and modernization are responsible for bringing in a materialistic approach into our life and they are the source of the crisis in value education.

Talking of the impact of Sciences, Dr. Radhakrishan said : "Natural Sciences have placed in our hands a dangerous instrument. Social Sciences will place in our hands a second instrument as dangerous as the first. Men who are learned in Social Sciences have used the technique of propaganda for correcting human nature by pondering to its material and emotional greed". It is therefore imperative to ensure that Science and deadly machinery got into "other hands than those of warring Ceasars and despotic Tamburlains". We are no longer in a position to grant absolute neutrality to science and its fruits. Scientists too ought to cultivate a sense of the moral and human welfare ultimately depends on right choice. What we need is not so much what our Scientists **can** do, but what they **ought** to do. Was it not the scientist in Johnson's **Resselas** who said : yes, I have invented this winged horse; but I will not release its secret unless people become **moral**. At a time when traditional values are called in question under the impact of modernization, it is for us to have a close look at the type of life and individual need and the society to be constructed. We in this country have a plural society which means there are a variety of religions, languages and regions. Taking into account the requirements of different types of people living in this country, social values have to be formulated. Since independence some attempts have been made in this direction. For instance, the Constitution makers have formulated certain clear values like justice, liberty, equality and fraternity, secularism, democracy and socialism. These are the accepted national values. Similarly as a result of our national requirements a few other values have emerged like national integration, small family.

In a plural society like India there has to be a constant endeavour to identify generally acceptable values and promote them.

So far as the individual values are concerned they may vary from society to society, religion to religion.

But some values like Sathya, Dharma, Santhi, Prema and Ahimsa should be free from controversy; they should be acceptable to all the people in the country.

We can even attempt to find out the essence of all the religions and teach them. Referring to the essence of religions, the Upanishadic philosophy says : "Just as the milk of the cows of different colours has a single essential colour i.e. white, similarly, Truth, though variously proclaimed by different proclaimers, is always the same". In the words of Radhakrishnan : "The great religions give us the different dialects until man has tried to speak of the Unseen . . . the living faiths of mankind are different paths to the same goal, the different ways up the supreme mountain whose summit is the divine unity." For instance, the Holy Quran says :

> "Let there be no compulsion
> in religion.
> Truth stands out
> clean from Error".

To quote the Quran again :

> "And let not the hatred of others
> make you swerve to wrong and
> depart from justice.
> Be just; that is next to piety."

These are some of the values which have to be promoted. They have to be promoted by the family, educational institutions and the society. Since in this seminar we are concerned mainly with Education, particularly higher education, it is time that the educationists paid attention to this aspect. The main criticism against our universities today is that they are promoting scholarship in specialised areas of knowledge without relevance to actual life. One can be a distinguished physicist or an economist, but still may not know how to relate himself to other individuals and the society. "Education does not mean getting the knowhow of the alphabet. What is learnt has to be practised and shown in your daily life thereby sanctifying your life, and you must try to understand the inner purpose of life," says Bhagavan Sri Sathya Sai Baba. It was Radhakrishnan who said : "Buildings do not make a University . . . The University is the sanctuary of the intellectual life of the country."

The main problem then seems to centre on the teacher. Most of the teachers today enter the profession without any preparation for it. They may be experts in their subjects but several of them do not have any idea of the purpose of higher education in general and the importance of values in Education. **Unlike other subjects which can be taught without much difficulty, it is not easy to teach values to the students. The teacher of medicine need not suffer the diseases which he teaches but the one who talks of values has to necessarily practise them. The values are one area where the gap between preaching and practising should not exist ; Unless the teacher himself practises the values that he preaches, he would not carry any conviction with his students.** A distinguished scholar need not necessarily be a distinguished man; sometimes, one should not be surprised if he is exactly the opposite. Let me invite your attention to the recent strike by the University Teachers. Commenting on a certain incident which took place at the time of the settlement of the strike, Nikhil Chakravarthy the well-known journalist, has this to say : At a gathering of the members of the Federation near New Delhi's Jantarmantar, the aggressive local teachers not only surrounded the President and the General Secretary of the Federation but physically assaulted them in public, tearing off their clothes and smearing them with dirt and it was only the police who could rescue them. A shocking sight of insensate intolerance which had the character of an underworld brawl.

It is intensely disconcerting, if not a big shame, that a community of teachers should indulge in such an attack and humiliate their fellow teachers in such a manner. Those who are supposed to educate our youth and uplift their character into becoming worthy citizen of this great country are indulging in violence. Is it not a case of total abdication of moral responsibility ? asks Mr. Chakravarthy. Let us look at it from the point of view of the Federation President who was beaten up. How will he be able to exhort his pupils to practise discipline and preserve integrity ? And the teachers who have participated in such goondaism, how they can go back and claim the respect and attention of their pupils. Chakravarthy concludes : "It provides a measure of our abdication of cherished values". Therefore, let us resolve to inculcate values in the custodians of our children. To me the crux of value orientation is the teacher. He is an important source of values. His thoughts and actions influence pupils a great deal. Value orientation must therefore begin with the custodian of the young.

What better place is there in the country to originate these values and spread the word, the good word, the gospel than the Sri Sathya Sai Institute of Higher Learning ? What I have learned here is a different approach to life and what I have seen is a different culture in the making. After seeing what happens here, I am tempted to think that it would be good if our students, teachers and Vice-Chancellors before they join the universities are exposed to this discipline and value system. Individually it will do them lot of good and collectively society would be benefited a great deal. □

Cost Benefit Analysis in Higher Education

Some Pitfalls

A. Ramanathan*

Education is now one of the largest organised activities of a nation, both in terms of numbers and expenditure. The old view that education is merely a consumer good is no longer valid. The results of research in economics of education have amply testified to the productive significance of education, and it is widely accepted that expenditure on education is an investment, promoting the long run growth of the economy. While education has been rightly regarded as the road to economic development, higher educational expenditure is further considered as investment in human capital formation. The higher educational sector is the fastest growing part of the educational system in many countries.

The high rate of return on investment in education is the economic argument brought forward to justify large expenditures on this sector. The computed returns are said to be useful guides for efficient resource allocation. Attempts to determine rates of return on various types and levels of higher education are also useful for making intertemporal and, possibly, cross country comparisons.

Efforts at measuring the rates of return in education have, however, demonstrated that this cannot be estimated unless some rigid assumptions are made, e.g. all expenditures on education are investments, that the education market is perfect, that employment, earnings, etc. of those who receive education follow the assumed patterns, and so on. Since education has broader objectives than purely monetary considerations, comparison of rates of return of education with those of other sectors of the economy may not provide clear insights into the determination of the optimum size of the budget (both public and private) for education.[1]

There are three main approaches to the measurement of the returns to educational expenditure. The first approach calculates the life-time earnings of people who have undergone various lengths of education over those who have not, estimates the cost incurred on their education and derives a rate of return on an individual's education. The second approach is macro-economic and tries to relate increases in aggregate production to increases in physical factors such as labour and capital. The residue, that is whatever is left over, is attributed to a variety of forces which improve the quality of human beings as productive agents, and some part or the whole of it is identified with education. It is thus known as the residual method. If the growth of the national product over several decades is such that the expansion of land, labour and capital does not account for the whole increase, the remainder must be due to investment in human beings. The third approach relates all social benefits with all social costs (or expenditure) on education. The benefits are social even though the recipient of education is also benefited. The economic value of a proposed investment is expressed as the present value of the future stream of net benefits accruing to all affected by it (whether they pay for it or not), divided by the present value of its costs over life. The value is equal to the net future benefits expressed as rate of return on the capital costs.[2]

The technical shortcomings of the rates of return calculations have aroused widespread skepticism. They can be generally related to the following aspects :

(1) To consider only the individual earnings as the benefit of education may be to underestimate it a good deal. The relative contribution of public and/or private finance to higher education should depend on the magnitude of both private and social benefits. Even if the existence of both individual and social benefits are recognized, it is hardly possible to draw a line for determining the respective share of public and private funds to finance advanced education. With regard to non-economic benefits, there are no techniques available to quantify either the private benefits or social benefits. Not everything in education can be measured, or measured without damage to factors that involve value judgement more than statistics.[3]

**Lecturer in Economics, Indian Institute of Technology, Bombay.*

(2) Educational expenditures, as a form of human investment, increase the future earnings of the individual, but they also satisfy certain psychic needs of the person concerned.[4] Improvement in the quality of his life, higher standard of receptivity to new ideas and techniques, etc., are some non-monetary benefits which, especially, higher education may give rise to. Measurement becomes difficult in the case of such non-monetary benefits.

(3) We cannot say whether the scale of educational preference of parents/students depends entirely on the income that various types and levels of education enables a student to earn in life. Very few parents will calculate such rates of return on higher education before deciding or choosing the courses of education. The family has certain manifest difficulties as a decision-maker in this area. Further, part of the higher earnings of those who obtain various qualifications may often arise due to non-educational factors such as innate ability or family background, the power of the group (professional, managerial, etc.) to which the students belong, conditions of the labour market, increased mobility, etc. Besides, some people are more interested in relative rankings rather than in absolute earnings. It is difficult to disengage all these factors while making use of earning profiles. It will be erroneous to conclude that educational qualifications are the only things that matter. Furthermore, the arbitrary returns given to various professions and vocations have been fixed more or less by historical circumstances; once having been fixed, these figures can be changed only by great fluctuations in market supply and demand or by collective bargaining.

(4) The education-GNP correlation does not tell us all about the causal relation between them and may therefore be misleading.[5] The sense of causality has not also been clearly supported by numerical evidence. It cannot, however, just mean that 'investment in human beings by means of education occurs as a response to the demand derived from growth'. According to Schultz, 'investment in human capital in the form of education is both a response and a contribution to economic growth'.[6] More recently, some economists are beginning to see that high rates of education output followed rather than preceded initial spurts in economic growth. Vaizey says : "Although there is no certainty as to the exact role that education plays in promoting economic growth, one thing that we can be perfectly certain of is that economic growth gives to rapidly increased expenditures in education."[7] The fact is that there is a multiplier effect between education and economic growth. The lead-lag components which again has to be a result of technology and market conditions are so important in this connection. Attempts are needed to identify these lead lag coefficients.

(5) The above approach which reconciles cause and effect relationship between education and economic growth starts with the given data of a total increase in output over a given period and then tries to impute it to specific

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inputs. Changes in output may also occur due to other influences like economies of large scale, improvement in the quality of capital assets, improved health of the labour force, non-formal education, lower level of taxation, improvement in industrial relations, changes in the product-mix, reorganization of the economic system itself, fall in the price of imports relative to exports, etc.[8] Isolation of education from them ignores the importance of coordinating policies, and aggregating all type of 'education' obscures the type of education required for development.[9]

(6) On the cost side, special problems will have to be faced such as whether the opportunity costs in the form of foregone earnings should be considered in situations of different levels of unemployment or not. The cost of education also includes costs which are governmental as well as private institutional expenditure and fees and other incidental expenses incurred by the students, particularly on the higher education sector. The indirect cost consists of, among other things, the amount of money the individuals would have earned had they not joined an educational institution. This is not only a private cost to the students' or their parents' but it is also a social cost when all recipients of education may not be able to get employment and the potential addition to Gross National Product remains unrealized.

(7) While calculating the direct institutional cost, the implicit costs of depreciation and interest charges on the capital invested in school and college buildings, libraries, laboratories, equipments are concealed. So far as expenditures other than fees (indirect cost) are concerned, the non-tuition fees such a expenditure on books and stationery, local transport, private tuitions, hostel expenses etc., are important. Here we are on hazy grounds and statistics relating to these shadow prices may be meagre. The allocation of public funds to higher education cannot be made socially efficient under circumstances when information on cost is inadequate. Aggregate analysis should be supplemented by studies at the institutional level. There is need for both macro level studies concerned with between-institution costs and micro level studies based on individual establishments.

(8) A substantial part of higher education takes place in universities which have functions other than the teaching of students. While making an analysis of costs, the staff time spent on research or external professional work, public services, etc. must be taken into account. These costs are mixed up with the cost of education. "The teaching and research are like mutton and wool, joint production of the academic sheep; and the academic sheep would not be willing to do without this wool. He thinks, perhaps, rightly, that a nude sheep would make bad mutton."[10] It is difficult to separate the costs of teaching from those of research, etc.

(9) The existing literature on the rates of return calculations do not really incorporate the issue of income distribution. It is only an 'allocative' approach which seeks to maximise individual incomes or social welfare by concentrating on the costs incurred by and the returns accruing to educated individuals or society. Higher education, particularly, is not neutral in its income distribution effects; some people gain future income streams at the cost of others.

(10) The entire approach rests on the marginal productivity theory. It fails when increased earning do not reflect increased productivity, but merely increased bargaining power, or if increased education is merely taken as an index of some other attribute considered desirable from an economy's point of view, the excess earning cannot be attributed to education. In a situation of administered prices, lack of foresight and full knowledge, immobility and various market imperfections, earnings do not reflect the marginal productivities.

(11) Besides, the studies made so far have concentrated mainly on formal education; the economic efficiency of informal education has been neglected perhaps due to the difficulty of obtaining data.

To sum up, the modern discussion on the economic value of education tends to show that they are all based on the abstract world of perfect competition, marginal productivity and equilibrium and so on. On the basis of such assumptions, attempts have been made to establish a positive correlation between income earning capacity and the level of education (micro-level) and education and economic development (macro-level). In such a mechanistic interpretation of the role of education in economic development, only the direct effects of education, and particularly higher education have been emphasized. The indirect (external) effects of education are ignored in such an approach. These external returns to education may be as important and enduring as the direct returns though it may be difficult to identify and quantify such benefits. Further, whether it is education which promoted economic growth or whether education (with its, say, consumption aspects) is promoted by economic growth, continue to remain a hotly debated question. Examination of the lead-lag relationship also assumes significance.

Economists who have taken a hand in estimating the returns to education, have, no doubt, made substantial progress. These estimates and those pertaining to cost have reached the stage where they are becoming useful allocative guides.[11] In the light of the issues detailed above, those rates are, however, to be carefully interpreted. Adjustments will have to be made for several factors which are difficult to compute in exact terms. They provide only signals of direction, not statements of actual amounts to rely upon. Though the contribution which education (particularly higher education) makes is not something that can be clearly identified and measured, the correlation between spending on higher education and the growth of the national product cannot be disputed. Considering this aspect, the investment concept in higher education has always been emphasized. On this issue, a good degree of agreement appears to exist. However, wide differences among countries with regard to the relative importance given to higher education still exist; development and returns from higher education may also depend on the progress achieved at lower levels of education. Conclusively, the question of precise calculation of rate of returns in higher education, in particular, needs more attention. ☐

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MINISTRY OF HUMAN RESOURCE DEVELOPMENT
DEPARTMENT OF EDUCATION
AGATHA HARRISON MEMORIAL FELLOWSHIP 1988-90

Applications are invited from Indian Nationals for Agatha Harrison Memorial Fellowship, which the Government of India have instituted at St. Antony's College, Oxford.

The fellowship is tenable for two years in the first instance which can be extended by one year more on the performance of the candidate.

The fellowship carries a stipend of £ 6,000 per annum and economy class air passage (both ways).

The spouse of the selected candidate will also be provided economy class air passage provided he/she stays in the United Kingdom with the fellow for a consecutive period of at least one year.

The fellowship is meant for scholars who have specialised in Modern Indian Studies in the subject-fields of History, Economics and Political Science. Candidates should have a uniformly, brilliant academic record (with at least 60% marks at the Master's) degree level) with Ph.D. Degree in the subject field chosen or published works of equivalent merit which have received outstanding recognition.

Candidates should be between the age of 30 and 40 years (42 years in the case of SC/ST candidates) as on 1.10.1987.

The candidate should apply for the above scholarship on plain paper with a recent passport size photograph, furnishing the following details/particulars to the Assistant Educational Adviser, Ministry of Human Resource Development (Department of Education), External Scholarships Division, Section E.S. 4, Room No. 517 'B' Wing, Shastri Bhavan, New Delhi-110001, by **16.11.87**. The applications received late will not be entertained.

FORMAT

1. Name of Scholarship Scheme.
2. (a) Subject (b) Sub-Subject.
3. Name of the Candidate (in Block Letters), with full mailing address.
4. Date of birth and State to which the candidate belongs.
5. Whether a member of SC/ST or a tribal or aboriginal community. If so, give full particulars.
6. Academic record starting from high school/ higher secondary

Name of the University Board Institution.	Examination passed	Year of passing	Division/ class with position, if any	Percentage of marks obtained & position if, any	Subjects taken.

7. Details of Professional/Practical Training and Research, Experience, specifying the period and number of papers published, previous employment with name and date of employment, if any.
8. Nature of the present employment with date of appointment, designation and the name and address of the employer.
9. Names, designation and address of three referees who are familiar with work of the Scholar.

[N.B.] : Candidates called for interview will have to bring with them the comments of all three referees).

10. Have you been abroad ; if so, give full particulars of the country and the period; also mention the year of return to India.
11. Proposed programme of study/research/ training :
(i) the work in which engaged at present (ii) Nature and programme of study/research desired. (iii) Future plans/prospects after the proposed studies/research, and (iv) how are these related to the technical or economic development of India.
12. Crossed Postal Order of Rs. 5/- (Rs. 1.25 paise in case of SC/ST candidates etc.) payable to the Secretary, Ministry of Human Resource Development (Deptt. of Education), New Delhi may be attached with the form with passport size photograph (one copy).

Place : Date : (Signature of the Candidate)

Note : Employed candidates must send their applications fully sponsored by the Employers. However, advance applications will be considered provisionally pending sponsorship by employers.

—davp 87/324

Environment Research Projects

The Ministry of Environment and Forests is reported to have sponsored 353 research projects under the environmental research and man and biosphere programme in universities and research institutions in the country aimed at conservation of environment. The main projects include research in the field of Ethnobiology, Heavy Metals, Seed Biology and Tissue Culture, Fluorosis and Effect of Air-pollution on Plants.

The All India Co-ordinate Research Project on Ethnobiology is designed to take stock of the tribal situation in the country and to evolve methods for conservation and reorganisation of tribal knowledge and skills. The projet presently operating at 15 centres covers about half of the tribal areas. So far above 5,000 wild plants, used by tribals to meet their daily requirement for heath care, food, shelter and protection, etc have been recorded.

The project on Heavy Metals has been undertaken to study pollution around industrial and mining complexes. The first phase of the programme consists of analysis of air, water, food, samples and blood tissue for mercury, lead, cadmium chromium, manganese metal. So far nearly 4,500 samples have been collected in different biogeographic areas for analysis.

The Seed Biology and Tissue Culture programme involves identification of endangered species on a region basis, genepool conservation, artificial propagation in natural habitats and development of techniques of mass multiplication of selected plant species. Currently investigations are going on 58 plants species of high value herbal drugs, endangered and other plant species.

The Fluorosis programme is designed to understand the basic mechanism of the flouride effect on non-calcified tissues, their intake and impact on the health of the populalation while the project on affect of air pollution on plants aims at finding out the response of plants to air pollutants and its impact on vegetation.

Literacy Awards

The Nehru Literacy Award, instituted by the Indian Adult Education Association (IAEA) in 1968 for outstanding contribution in the promotion and development of adult education, for the year 1987 has been awarded to Prof. N.G. Ranga, M.P. and Deputy Leader of the Congress Parliamentary Party.

Prof. Ranga who returned to India in 1926 after higher studies at Oxford, organised adult education programme as part of the struggle for freedom initially in his village Nadubrolu (A.P.). A leader of agricultural labour, he conducted classes for peasantry to help them imbibe democratic ideals and today inspires and guides them to follow the national goal of socialism, secularism and democracy. Later in cooperation with eminent educationists and freedom fighters like Dr. Zakir Husain, he founded the Indian Adult Education Association almost fifty years ago.

By founding the Forum of Parliamentarians for Adult Education recently, Prof. Ranga has given a call to legislators to provide leadership for constituency-wise programme of mass mobilisation for people's participation in all developmental activities.

Prof. Ranga has written more than thirty books including some books for the benefit of Adult Education workers at the grass-root level.

The Association has also awarded the Tagore Memorial Award for Women's Literacy to Smt. Lakshami N. Menon, former Minister for External Affairs and Chairman, 'All India Committee for the Eradication of Illiteracy Among Women' for her outstanding contribution in promoting literacy among women and in motivating and inspiring several agencies to undertake literacy work among women.

PG Courses through Correspondence

The Department of Distance Education of the University of Kashmir is introducing Post-graduate Courses in Commerce, Mathematics, Urdu and Economics through correspondence from the current academic session.

The introduction of these courses will go a long way in meeting the demands of a large section of the society particularly those belonging to far-flung areas of Valley. This would also meet the requirements of inservice teachers who have not been in a position to come to the University to complete their courses.

All India Science March

A marathon All India Science March, known as "Bharat Jan Vigyan Jatha" to build up a peopel's science movement was started on October 2, Mahatama Gandhi's birthday. It will end on November 7, the birthday of Dr. C.V. Raman.

Jointly organised by the National Council of Science and Technology Communication (NCSTC), the State Governments and the State Committees, the March will cover 25000 kms throughout the country. The total cost of the march would be Rs. 2 crores, of which 40 per cent would be borne by the NCSTC.

All the marchers would reach Bhopal from different parts of India on November 6 and attend a conference of scientific workers, and popular science writers on November 7.

Enroute, the science groups consisting of 30 men and women would stage science-oriented cultural programmes with themes like science and national integration, science for Peace and science consciousness among the massess. They would also hold group discussions, slide and film shows and exhibitions.

HP Varsity to Introduce +3 Pattern

The Himachal Pradesh University will introduce the plus three system under the new education policy from the next academic session. According to Dr. K. C. Malhotra, Vice-Chancellor, the university has adopted the Delhi University pattern. The Academic Council, the Board of Studies and the Faculties have been provided with copies of the syllabi of that university. Copies have also been sent to the Principals of all colleges in the State to elicit their views.

The university also proposes to set up autonomous colleges in the State.

The Academic Staff College of the university is also expected to start functioning soon. The college will run orientation courses for in-service as well as fresh teachers.

Wattumull Foundation Award

Professor Sohail Ahmad of the Department of Microbiology, Jawaharlal Nehru Medical College, Aligarh Muslim University, has been given an international award by Wattumull Foundation of the United States of America. The awards are given to outstanding scientists working in India for making useful contribution to this country's development in science and technology. These awards were this year given specially to celebrate India's 40th Anniversary of Independence.

Dr. Ahmad has been cited in this award for his continued and exemplary contribution in Microbiology, with particular reference to his work in the development of parasitic vaccines. His main work is in the field of amoebiasis and malaria.

News from Agril. Varsities

Forestry Research Council

The Union Government has set up the Indian Council of Forestry Research and Education (ICFRE) with Dehradun as headquarters to boost forestry research in the country. ICFRE will oversee the activitiesrelating to forestry research and education and co-ordinate the efforts of the institutes and organisations concerned in the country. It will ensure the best method of application of all sources of scientific knowledge for the solution of the problems of forestry, engage in basic research in the areas in which the country is deficient, co-ordinate the activities of the institutes engaged in forestry research, lay down the policies and service conditions of researchers, act as the clearing house for research, and support forestry education programmes in the State Agricultural and other universities.

Apart from the Director-General, there will be 18 other members of the council. Among them will be representatives from the Indian Council of Agricultural Research (ICAR), Council of Scientific and Industrial Research (CSIR), University Grants Commission (UGC), National Wasteland Development Board (NWDB), Director-General of Technical Development (DGTD), besides those from the State Agricultural Universities. ICAR will nominate the representatives from the agricultural universities.

Among the members will be one chief conservator of forests each from the northern, eastern, north-eastern, central, southern and western States to be nominated by the Union Department of Environment, Forests and Wildlife. Besides, two Joint Secretaries of the Union Ministry of Environment and Forests will be members of the council along with the directors of the Kerala Forest Research Institute, the Wildlife Institute of India (Dehradun), and the Indian Institute of Forest Management (Bhopal).

High-yielding Hybrid Coconut

The Regional Agricultural Research Centre at Pilicode under the Kerala Agricultural University has evolved a new hybrid coconut variety PHC-1. The new hybrid coconut has out-yielded all other coconut hybrids and has more copra content. It is a cross between Gangabondam and Lakshadweep ordinary.

Nursery studies have revealed the superiority of Gangabondam as a male parent in coconut hybridisation programmes. A large number of hybrids were produced previously with Gangabondam as the male parent and Lakshadweep ordinary. Andaman ordinary, Cochin-China, Java and West Coast tall as the female parents with the objective of selecting hybrids having a good yield.

Among these Lakshadweep ordinary Gangabondam cross was found to be superior to all other hybrids in respect of annual rate of leaf production, setting percentage, yield of nuts and copra out-turn. It was also found to be markedly superior to its parents Lakshadweep ordinary and Gangabondam.

The hybrid registered an average yield of 108 nuts per palm per year as against 86.7 by Lakshadweep ordinary, 42.4 by Gangabondam and 64.3 by West Coast tall. It also yielded 3.749 kg. of copra per hectare as compared to 2.989 kg. by Lakshadweep ordinary and 2.059 kg. by West Coast tall. This trend was followed in oil yield also.

HAU Kisan Mela

The two-day annual farm fair of Haryana Agricultural University was held on 25-26 September, 1987. More than 5000 farmers from all over Haryana came to visit the Mela. To facilitate the visiting farmers in seeing for themselves the Kharif crop, adequate arrangements were made by the scientists. Scientists deputed at different locations of various crops took the visiting farmers to the demonstration plots of cotton, bajra, moong, urd, arhar, sugarcane and medicinal plants and explained to them the latest technology applied in their cultivation. This year the demonstration plots of dry-land farming were the centre of main attraction for the visiting farmers. Here keeping in view the current drought the farmers were explained the various water saving techniques to save their crops from further damage of the drought.

Question-answer sessions were held in the afternoons on both days at the Kisan Ashram where farmers asked from the scientists the solutions to their day-to-day agricultural problems.

ICAR Sanctions New Projects

The Indian Council of Agricultural Research (ICAR) has sanctioned an all India project for studying 'the impact of modernisation in Agriculture on women with special reference to Rice Farming system in the country' to the College of Rural Home Science under the Kerala Agricultural University. The project will be fully funded by the Council with an outlay of Rs. 80,000 for two years.

Another scheme 'Population characteristics, bionomics and culture of *Labeo dussumieri* (Cuvier)' has been sanctioned by the ICAR to Dr. B. Madhusoodana Kurup, Assistant Professor (Fishery Biology) of the College of Fisheries, Panangad. An amount of Rs. 2,44,200 has been allocated towards the conduct of the scheme for a period of three years. The principal objectives of the project are to study the population characteristics, detailed bionomics, development of brood stock, larval rearing and culture feasibility of an endemic carp of Kerala.

TAKSHILA KENDRIYA VISHWAVIDYALAYA DEGREES ILLEGAL

The University Grants Commission has notified that a self-styled Institution named "Takshila Kendriya Vishwavidyalaya" has been functioning at E-20, East Uttam Nagar, New Delhi-110059 and is giving advertisements in the newspapers for the award of degrees/diplomas for various courses, such as Inter, B.A., M.A., B.Com., BEd., M.Ed., MPA., LLB, Ph.D., D.Litt. and Library Science, etc. under their so-called 'Open University Scheme".

The above said so-called "Takshila Kendriya Vishwavidyalaya" is neither a university established by a Cennral or State Act nor deemed to be university under Section 3 of the U.G.C. Act 1956 and as such it is not empowered to award degrees/diplomas in terms of the provisions contained under section 22 of the said Act.

The general public is, therefore, informed that above said institution has not been recognised. Anyone dealing with it for pursuing academic studies for degrees will be doing so at his/her own risk and responsibility.

News from UGC

INSAT-1B Programme of UGC

Between 15th October to 29th October, 1987 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV Network throughout the country. For the viewers in Delhi and surrounding areas these programmes can be seen on the second channel.

15.10.87

"The Story of Jade"
"A Difficult Heritage"

16.10.87

"Strides In Space"
"Journey Through The Solar System—Our Star The Sun"

17.10.87

No Telecast

18.10.87

No Telecast

19.10.87

"Crystals And Their Sturcture"
"Classical Mechanics-V Psuedo Forces"
"Waves"

20.10.87

"India's Population Problem"
"Secondary Classroom Management Techniques"

21.10.87

No Telecast

22.10.87

No Telecast

23.10.87

No Telecast

24.10.87

"Cinematic Eye-Rules Of The Game"
"Language Of Gestures-I"

25.10.87

No Telecast

26.10.87

No Telecast

27.10.87

No Telecast

28.10.87

"Selection In Action-III"
"Reconstructive Surgery Of Painful Joint Disorders-II"
"A Talk With Dr. L. Simonato On Occupational Cancar-I"

29.10.87

"The Gods Of Clay-II"
"Lucoce"
"University Round-up"

Sports News

Guru Nanak Dev Retains B.L. Gupta Trophy

Guru Nanak Dev University has won Dr. B.L. Gupta Inter-University General Championship Trophy for the year 1986-87 for the fourth year in succession. Punjabi University, Patiala are the runners up while Poona University fills the third place.

This trophy is awarded to the best University in terms of performance in the Inter-University Sports programme on the basis of criteria laid down by the Sports Committee of AIU and is an evidence of supremacy in sports.

The trophy was instituted by the Association in the year 1980-81 in the memory of late Dr. B.L. Gupta, former Head of the Department of Physical Education, Panjab University, Chandigarh who had made significant contribution in the field of Sports in the university sector.

We Congratulate . . .

(1) **Prof. M.S. Agwani who has been appointed Vice-Chancellor of the Jawaharlal Nehru University, New Delhi.**

(2) **Shri G.B. Mohan Thambi who has been appointed Vice-Chancellor of the University of Kerala, Trivandrum.**

Book Review

A Sad Myth

Imtiaz Ahmad

Sharma, G.D. and Mridula. Elite in the Making. New Delhi, Association of Indian Universities, 1986. 163 p. Rs. 40.00.

One of the greatest traumas of growing up is to become increasingly disenchanted with what one has been brought up to believe. Nowhere is this trauma quite as evident at a collective level as in the field of education. Many people belonging to the generation born around the time of Independence had been brought up to believe that education held out the key to progress and development and rendered it possible for those whose access to social and economic assets was historically weak and restricted to do well in life. As the people of that generation have grown up they have become painfully aware that the magical role assigned to education was a sad myth.

Proceeding on the premise which formed the core of national thinking on education—namely, that education contributes to the social and economic development of the nation and brings about social equality and income redistribution through provision of educational opportunity to all—Sharma and Mridula have in this study tried to look at the system of undergraduate education from the vantage point of University of Delhi. Their objective is principally to explore what kind of human resource material the system produces, how far is higher education linked with the socio-economic realities of the life of the people, what is the social profile of those who are processed through it and whether their social profile has any influence over their performance and achievement, and whether undergaduate education is able to offset the negative consequences of adverse social background factors for the large majority of the students.

It is appropriate that Sharma and Mridula should have focussed on the University of Delhi for this investigation. Quite apart from being a central university which itself means a great deal in the way higher education is organized in this country, the University of Delhi is a premier university and what picture is revealed of it can be a sound pointer to how much better or worse the situation would be in the muffasil universities and colleges which receive far more slender funding and whose student population is drawn from rural areas with a considerably weaker command over socio-economic and cultural resources required to do well in higher education.

Like so many other universities across the country, the University of Delhi is a federal university with a vast network of colleges affiliated to it. Sharma and Mridula selected six colleges and used the admission forms of 751 students approximating to nearly 30 per cent of the total students enrolled in those colleges as the source of data for their investigation. The colleges were selected according to a variety of criteria, namely, whether it was a boy's or a girl's college, its location on the campus or outside, and the reputation popularly enjoyed by it in terms of academic standards. The data have been analysed aggregatively for the University as well as de-segregatively for each college. The results of the research have been presented in seven chapters detailing the theoretical approach adopted, the methodology employed, the subjects and courses chosen by the students, the socio-economic and educational profile of the students' families, variations in students' performance at the higher secondary and graduation levels, and the policy implications which arise out of the study. One of the positive aspects of the study is a presentation of case studies embodying the views of the students on higher education and how far it serves any useful purpose for them, though it is somewhat regrettable that this aspect is considerably overshadowed by the scheme of overall presentation of the study.

The findings of the study are as one would expect from a research on this problem. Education remains very largely a preserve of students with a better economic, social and educational background. If a boy or a girl happens to be rich, the probabilities are that he or she would join one of the campus colleges which enjoys a better prestige rating, enrol for an honours course with English as a medium of instruction and examination and pass with a narrower gap between previous percentage and the percentage of marks in the BA examination. If poor, he or she is more likely to go to one of the outlying colleges which are far less known in most cases, enlist for a pass course with Hindi as a medium of instruction and examination, and pass with roughly the same poor percentage as that at the previous examination. The study interprets passing at roughly the same percentage which poorer students obtained at the previous examination as a sign of improvement and attributes this to the efficiency of the college. This is quite erroneous. A student is admitted to those colleges at a much lower percentage and if his percentage went down any further he would fail. Thus, what is projected as improvement in reality turns out to be the bare minimum beyond which he would have failed and reflects a lack of any improvement at all. Further, it still keeps a student at a disadvantage vis-a-vis his or her more fortunate and socially and economically advantaged counterparts who pass with a narrower gap between the percentages at the higher secondary and BA levels.

The implications of the findings are obvious enough. They explode the popular myth about education being an instrument of levelling down social class differences and promoting social equality through equalization of educational opportunities. On the contrary, what emerges quite clearly is that educational opportunities are equal but different and education is doing little more than merely serving to reinforce existing social and economic inequalities. At best, as indeed Sharma and Mridula note, it serves as a sieving device, stamping those who command social and economic assets as meritorious and funneling those who are socially and economically disadvantaged out of the system on the pretext that they are lacking in merit.

Three questions arise in the face of these findings which are a common experience of every average student in the country and could have needed to be established through research only for educational administrators and policy makers. The first relates to the role of education in our society. If education is not promoting social equality or can at best be said to be doing so at a pace which amounts to no more than a drop in an ocean, what role is it really performing for the society? An answer to this question in inadvertently provided by Sharma and Mridula by the manner in which they have titled their research. Its role is to produce an elite. Since those who go through it already belong to an elite class by virtue of their command over social and economic resources of the society, it would be more appropriate to conclude that education is more an instrument of reinforcing their elite standing rather than creating an elite.

The second question is why despite every evidence to the contrary the myth about education being an instrument of promoting social and economic development and levelling down social class differences remains so popular with our educational administrators and educational policy makers. Is it mere vested interest or some other fundamental weakness which is responsible for this ? Why are our educational administrators and educational policy makers not able to devise the means whereby education can be made to fulfill the radical role anticipated from it in national thinking ? Certainly the vested interest of an elite to which our educational planners and policy makers belong is a significant factor in their perpetuating the myth and refusing to reorganize education so that it is able to promote social equality, but this is still not an adequate explanation of their failure. After all, education has been used as an instrument of levelling down social class differences in other societies by the same ruling class which stood to lose most heavily from such levelling down (the case of Tanzania is well known). One possible reason seems to be that Mcaulay's Minutes of Education still form the conceptual framework of official thinking about education and few of our educational administrators and policy makers dare think beyond the assumptions underlying that thinking. Thus, they are satisfied with a little tinkering here and there with education through the instrumentality of new educational policy rather than offering fresh thinking about it from a national perspective.

This brings us to the third question : what is the precise linkage between what level of education one receives and where one eventually lands up in life ? A great deal has been talked about in recent years about delinking education from jobs and it has been made out as if this was some radical therapy which would put education back on the rails. It is worth asking whether such delinking is not already a reality. Christopher Jenks had in the seventies shown that in the United States little direct linkage was traceable between what level of education one received and where one finally ended up in life. He found other invisible factors considerably more significant and characterized them broadly as life chances. One has reason to suspect that life chances and the random operation of the factors subsumed under that omnibus expression is producing greater social equality in India than any amount of education. If this is indeed true, its full policy implications ought to be properly understood.

Perhaps, the Association of Indian Universities which sponsored the present study would do well to fund two further studies. One, it should fund a critical study to be made of the assumptions underlying Mcaulay's Minutes, which of those assumptions have been continued in the national educational policies, and how far they are consonant with the assumptions underlying our Constitution. Such a preliminary exercise may help educational planners to think out alternatives to our educational strategy. Second, the Association should fund Sharma and Mridula to pursue the 751 students they studied and try to find out where they ended up in life and whether wherever they landed up has had anything to do with their education. This should serve to clarify whether in the form and through the process it is imparted the entire education is not a waste of which ample evidence is already contained in the students' responses presented in the case studies.

Imtiaz Ahmad, Associate Professor, Centre for Political Studies, presently placed under suspension by the Jawaharlal Nehru University, New Delhi.

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RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Sociology

1. Sharma, Proveen. *Social status of working women in Sagar City.* HS Gour. Dr. Shrinath Sharma.
2. Sharma, Vandana. *Professional socialisation of student physicians in selected medical colleges of Delhi.* Panjab. Dr. S.R. Mehta.
3. Suryanarayan Rao, M. *Studies on some aspects of small arm ballistics having forensic implication.* HS Gour. Dr. M. Johari and Dr. G.C. Jain.

Economics

1. Bhandari, Bal Bahadur. *Industrialisation development in Nepal : A consistency of approach.* BHU. Dr. P.K. Chaubey.
2. Pandey, Ashok Kumar. *Indo-American economic relations.* BHU. Dr. S.C. Srivastava.
3. Singh, Shyam Bahadur. *Industrial trade.* BHU. Dr. D.K. Mishra.
4. Upadhye, Vidya Vinayak. *A comparative study of urban local finances with special reference to Sangli District.* Shivaji. Dr. J.F. Patil.

Public Administration

1. Choubey, Chandershekhar. *Madhya Pradesh ke police karmion ke prashasan evam prashikshan mein Police Prashikshan Mahavidyalaya ka yogdan.* HS Gour. Dr. G.P. Nema.

Education

1. Bhoje, Prakash Mallappa. *A survey of reading interest of pupils in secondary schools than the text books with special reference to Belgaum District.* Shivaji. Dr. M.G. Mali.
2. Chitindu, W.A. *Adult education in India and Zambia : A comparative study.* HP. Dr. Lokesh Kaul.
3. Mehra, Sunil Kumar. *Study of elements of education in Premchand's literature and its relevance to the new policy of education.* Devi Ahilya. Dr. U.S. Choudhry.
4. Sukumaran, P.S. *A study of the parental involvement in the education of mentally handicapped children.* Kerala. Dr. R. Sujatha Rani.

Home Science

1. Malhotra, Kiran. *Prevalence of obesity among children, 3-9 years : Related environmental and familial factors.* Delhi. Dr. Sushma Sharma.

HUMANITIES

Fine Arts

Plastic Arts

1. Gaur, Niketan Anand. *Comparative study of technique of metal casting of U.P., Bihar, Bengal, Orissa and M.P.* BHU. Shri Pandey Chandra Vinod.

Language & Literature

English

1. Dutt, Maya. *The archetypal woman in D.H. Lawrence's longer fiction.* Kerala. Dr. K. Ayyappa Panicker.

2. Nagpal, K.L. *Johan Updika's short stories : A thematic study.* HP. Dr. Atma Ram.

3. Neera. *Short stories of E. Hemingway : A thematic study.* HP. Dr. Atma Ram.

4. Paul, Ram. *Quest for identity in the novels of Kamala Markandaya and Bhabani Bhattacharya.* HP. Dr. Atma Ram.

5. Rai, Kalpana. *Plays of W.B. Yeats.* BHU. Dr. R.N. Rai.

6. Sethi, Vijay Mohan. *Short stories of Mulk Raj Anand: A critical study.* HP. Dr. Atma Ram.

7. Sharma, Prem Kumar. *The problems of alienation in the novels of Paul Scott.* HP. Dr. Atma Ram.

Hindi

1. Jai Dev. *Swatantrayottar Hindi upanyason mein Himachali parivesh.* HP. Dr. (Mrs.) Krishna Raina.

2. Parveen Bala. *Athaven dashak ke Hindi upanyason mein samajik yatharth.* HP. Dr. (Mrs.) Anjana Chauhan.

Geography

1. Yadav, D.K. *Spatio temporal dimensions of industrialisation in Satara District : A geographical perspective.* Shivaji. Dr. S.B. Sarang.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Library Science

1. Ojha, Dinesh. *Role of libraries and information centres in technology transfer for arid and semi-arid regions of Rajasthan : A case study.* Rajasthan. Dr. C.P. Sharma.

2. Sant, D.K. *Shodh Vigyan Kosh : Sadhan ani sandharbh granth. D. Litt.* Shivaji.

Psychology

1. Gaur, Sunil Dutt. *A comparative study of aggression among the majority and minority communities in India : An experimental investigation.* Delhi.

2. Kalia, Pushpa. *A socio-psychological study of student activists.* Panjab.

3. Sokhey, Gurminder Kaur. *A comparative study of the personality variables of the allergic and non-allergic individuals.* Panjab.

4. Venkataraman, Hari Lakshmi V. *Maternal employment: Effect of personality, self-ideal disparity, parent-child interaction and guilt factors.* Andhra.

Sociology

1. Chachondia, Vandana. *Jain samudaya ke adhunikaran ke vishesh sandarbh mein samaj-shastriya adhyayan.* Nagpur. Dr. T.S. Wilkinson.

2. Jat, Jagdish Narain. *Role adjustment and divorce in Hindu society.* Rajasthan. Dr. Ram Ahuja.

3. Lancy Lobe, S.G. *Social and cultural life of one lower social stratum of rural North Gujarat.* Delhi.

4. Rabea Khatun. *Education and modernization : A comparative study of two villages of Bangladesh.* Panjab.

5. Saxena, Kaushal Kishore. *A study of the emerging patterns of rural leadership in Malwa Region.* Devi Ahilya.

6. Suryakantham, M. *Response of rural women to family planning : A sociological study in East Godavari District of Andhra Pradesh.* Nagpur. Dr. T.N. Valunjkar.

Social Anthropology

1. Sridevi, Chitturi. *Role of fisher women in family and economy : A micro study.* Andhra.

Political Science

1. Abdul Jabar Abid Mustafa. *Arab Bath Socialist Party and the Congress Party : A comparative study of social bases and organizational structure.* Delhi.

2. Baldev Krishna. *Political participation in India : A study of 1971 and 1977 general elections.* JNU. Prof. K. Seshadri.

3. Benjamin, Joseph. *Social mobility and political participation of scheduled castes.* Rajasthan. Dr. S.L. Verma.

4. Bhardwaj, Prabhat Kumar. *Politics and poverty : Policies and perceptions in the Vth Lok Sabha.* Delhi.

5. Chakraborti, Bimalendu. *General Assembly : Third world : world peace; the changed paradigm.* Calcutta.

6. Debnath, Sailen. *Netaji Subhash Chandra Bose and secularism : His ideas and activities.* NBU.

7. Panda, Damodar. *Administration of cargo handling in the major ports of India.* Calcutta.

8. Singh, Nongmaithem Ibohal. *Judicial system in Manipur prior to 1891 A.D.* Manipur. Dr. N. Ibobi Singh.

Economics

1. Acharya, Sabita. *Economics of command area development : A case study in Orissa.* Utkal.

2. Das, Yogendra Nath. *A study of finances of the Bihar State Universities with particular reference to Bhagalpur University.* Bhagalpur.

3. Goel, Veena. *Price and output movements of agro-based industries in India.* NEHU. Dr. S. Prakash.

4. Jagtar Singh. *Agricultural development and scope of agro-forestry in tribal areas of Lahaul and Spiti Districts.* HP Krishi. Dr. S.C. Tewari.

5. Luhach, Ved Prakash. *Estimation of demand for nitrogenous fertilizer use in Haryana.* HAU.

6. Poudyal, Sri Ram. *Foreign aid, trade and development in Nepal.* Delhi.

7. Randev, Ashwani Kumar. *Economics of horticultural crops in tribal areas of Himachal Pradesh : A study of Kinnaur District.* HP Krishi.

8. Tiwari, Rakesh Kumar. *Madhya Pradesh ke adivasi samaj mein arthik parivartan : 1956 se 1981 ke beech Madhya Pradesh kee kuchh pramukh janjatiyon ka ek tulnatmak adhyayan.* Durgawati. Dr. P.D. Hajela.

Law

1. Chauhan, Jai Krishan. *Government contracts : A study of constitutional and legal obligations.* Panjab.

2. Saxena, Sarojini. *The legal position of the child under Criminal Law.* Vikram. Dr. I.C. Saxena.

Public Administration

1. Singh, Chandra Mauli. *Dynamics of rural development administration.* Rajasthan. Dr. Hoshiar Singh.

2. Vijay, Chand Mal. *Developmental administration in Rajasthan.* Rajasthan. Dr. Hari Mohan Mathur.

Education

1. Azad, Farhad Farhang. *Effectiveness of portage home-based training programme on cognitive development of pre-school mentally retarded children.* Panjab.

2. Binita Debi. *The changes in secondary education in Assam from 1964 to 1974 and their influence on higher education in the State.* Gauhati. Dr. S. Saikia.

3. Chowdhury, Golam Subhani. *Entry to higher education in Bangladesh : An investigation into students characteristics.* Baroda.

4. Goswami, Kusum Lata. *A study of the problems of working mothers and their impact on their pre-school children with special reference to the city of Guwahati.* Dr. (Mrs.) L. Das.

5. Jayasree, P. *Extent of concrete and formal thinking abilities linked to age and environment of high school science students in Kerala State.* Kerala. Dr. K.R. Sivadasan.

6. Padhan, Nitrananda J. *A study of socio-economic background, academic performance and job placement of university students.* Baroda.

7. Patel, Dharanidhar. *Academic achievement in relation to cognitive and personality differentials of socially disadvantaged and advantaged secondary school children in Orissa.* Panjab.

8. Shahrban, P.A. *The potentiality of certain elements of traditional culture among Muslims in Kerala for multi dimensional models of non-formal education.* Kerala. Dr. Vedamani Manuel.

9. Singh, Virendra Pratap. *Study of the patterns of reactions to frustration and professional adjustment of secondary school teachers.* Baroda.

Commerce

1. Brahmachari, Maniklal. *A study on the national programme of minimum needs with special reference to West Bengal.* Calcutta.

2. Dubey, Umesh Kumar. *Madhya Pradesh mein Mandala aur Balaghat Jilon ke adivasiyon ke krishi upaj ke vipanan ka vishleshanatmak adhyayan.* Durgawati. Dr. V.K. Basal.

3. Mukhopadhyay, Samit Kumar. *Eradication of poverty and Gandhian economic thinking : Indian case study.* Calcutta.

Home Science

1. Behera, Minati. *Studies on rural-urban difference in relation to decision making and acceptance of home science innovation in Cuttack District of Orissa State.* Utkal.

2. Salil. *Studies on development and nutritional evaluation of weaning foods.* HAU.

3. Saraf, Chandrakanta. *Chayan kiye gaye vidyut evam avidyut upkaraon ka tulnatmak adhyayan : Ujjain Nagar ke sandarbh mein : Samaymulya evam gati ko dhyan mein rakhte huye pratyaksh shodh.* Vikram.

4. Shah, Nikita Sanatkumar. *Netal and neonatal development for relation to maternal nutritional status with special reference to iron and magnesium and maternal food supplementation during pregnancy.* Baroda.

Management

1. Gupta, Jagdish Prasad. *Financial appraisal of public undertakings in Rajasthan.* Rajasthan. Dr. V.K. Dangayach.

2. Ramesh, Kotta. *Interpersonal relations in a higher educational setting : An organisational perspective.* Andhra.

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(ii) Knowledge of one of the high level languages like Fortran, Cobol, Algol, PL/1.

Workshop Superintendent

The candidate should at least be a second class Degree/Diploma holder in Mechanical/Electrical Engineering, having about five years' experience in Mechanical/Electrical Instruments Design and Fabrication and clear understanding of drawings and sketches. Relaxation upto three years in the period of experience to the Degree holders. Only candidates capable of guiding and controlling the work of Experimental/Technical staff in a first rate well equipped workshop need apply.

Senior Technical Assistant (for Microprocessor)

(1) Post-graduate degree in any Social Science with Statistics/Quantitative Methods as part of the curricular programme.

(2) Adequate knowledge of Data Processing in Fortran IV & familiarity with other softwares like DBASE or GRAPHIC.

(3) At least one year's experience of working on and maintaining a Micro Processor.

(4) Familiarity with and some experience of word processing.

@Senior Technical Assistant (Operator for SEM)

M.Sc. in Physics having two years' experience of operating SEM or TEM or similar instrument.

OR

Post B.Sc. Diploma in Electronics Instrumentation with 3 years' experience in operation or maintenance of SEM or TEM or similar instruments.

@Senior Technical Assistant (ESR Operator)

M.Sc. in Physics or Chemistry having two years' experience of operating ESR or similar instruments.

OR

Post B.Sc. Diploma in Electronics Instrumenation with 3 years' experience in operation or maintenance of ESR or NMR.

@Senior Technical Assistant (NMR Operator)

M.Sc. in Chemistry having two years' experience of operating NMR or ESR or similar equipment.

OR

Post B.Sc. Diploma in Electronics Instrumentation with 3 years' experience in operation or maintenance of NMR or or ESR similar instruments.

@Senior Technical Assistant (GC-Mass-Operator)

M.Sc. in Physics or Chemistry having two years' experience of operating GC-Mass or similar Instruments.

OR

Post B.Sc. Diploma in Electronics Instrumentation with 3 years' experience of maintenance of GC-Mass or similar instruments.

@Senior Techenical Assistant (Operator for Laser Raman Spectrometer)

M.Sc. in Physics having 2 years' experience of operating IR or Raman Spectrometer or similar instruments.

OR

Post B.Sc. Diploma in Electronics Instrumentation with 3 years' experience in operation IR or Raman Spectrometer.

@Senior Techenical Assistant (Operator for Scintillation Counter)

M.Sc. in Physics with 2 years' experience of operating Scintillation counters or having done isotopic work using other related instruments.

OR

Post B.Sc. Diploma in Electronics Instrumentation with 3 years' experience of operating Scintillation Counters or instruments related with isotopic work.

@Senior Technical Assistant (Operator for X-Ray Spectrometer)

M.Sc. in Physics having 2 years' experience of X-Ray Diffraction or any other X-Ray equipment.

OR

Post B.Sc. Diploma in Electronics Instrumention with 3 years' experience in X-Ray equipment.

@Note : With reference to the duration of experience, time spent for acquiring any additional training or degree in instrumentation will be accounted in lieu of experience.

Senior Technical Assistant (Zoology)

B.Sc. (General) Group A or B.

Technicians (Physics & Astro-Physics)

Ist Post (a) Diploma in Mechanical Engineering with 5 years' experience;

(b) Must be capable of working on milling machines, surface grinder shaper and knowledge and experience in running, maintenance and fitting of compressors of various applications, etc.

2nd Post (a) Diploma in refrigeration and air conditioning;

(b) Five years' experience in running and maintenance of various types of air conditioning and water Chilling Plants and their components, etc.

Workshop Technician (Electronics)

Diploma in Electrical Engineeing of a recognised Institution with atleast 3 years' practical experience of repairing, maintenance and handling of electronic instruments in a recognised workshop.

X-Ray Technician

Graduate with Diploma in Radiography—two years' experience as Radiographer in a General Hospital.

Technical Assistant (University Science and Instrumentation Centre)

Post B.Sc. Diploma in Electronics Instrumentation.

OR

B.Sc. having Physics & Chemistry subjects and aptitute in Instrumentation.

Instrument Mechanic

Must be thoroughly conversant with all types of Lathe work facing, surfacing, turning, multiple screw cutting (including various forms of screw threads) tape and curved turning, etc. Should be able to work on other workshop machines like shaper, milling and drilling, etc. Ability to repair Laboratory instruments like Galvanometres, Stop Clocks and Watches desirable.

Technical Assistant (Anthropology)

Graduate in Science. Experience in Lab. Techniques of the subject.

Technical Assistant (Botany)

Graduate in Science.

Junior Mechanic (Stores)

(i) I.T.I. Diploma or equivalent in Mechanic Shop/Workshop Machine.

(ii) Three years' experience in handling stores.

Pharmacist

Matric or equivalent examination. Must have passed the Pharmacists (Compounder) Course from a recognised Institution and must be a registered Pharmacist. 2 years' experience in the profession is desirable.

Laboratory Attendant

Should have passed Matriculation or an equivalent examination with Science subjects.

Attendant (Automobile)

Should be able to read and write and should know about the working tools of Automobile workshop. Atleast one year's experience of being associated with some reliable automobile workshop.

Part-Time Gynaecologist

Post-Graduate Degree or equivalent qualification from a recognised Institution with 5 years' experience after Post-Graduate Degree. In those disciplines where Post-Graduate Degree holders are not ordinarily available, Post-Graduate Diploma or equivalent qualification from a recognised Institution with 5 years' experience after Post-Graduate Diploma.

Special/Desirable Qualifications for System Analyst-cum-Sr. Programmer

(a) Experience of participation in training programmes in computer related disciplines.

(b) Intensive experience in system programming on a Third Generation computer system.

Junior Programmer

(a) Experience of participation in Training Programmes in Computer related Disciplines; and

(b) Knowledge of an assembly language.

Documentation Officer

Proficiency in Japanese Language (Level required is the Advanced Diploma Course of the University of Delhi).

Senior Technical Assistant (Zoology)

Ist Post (Electron Microscopy): (i) Experience of at least 5 years in operating and servicing Electron Microscope.

(ii) Knowledge of specimen preparation for Electron Microscopy (TEM & SEM) and Photography.

2nd Post (For handling GLC Counters) : 5 years experience in handling instruments like GLC & HPLC.

Technical Assistant (Botany)

Atleast 2 years' experience of handling and maintenance (including repairs) of Electronic Equipments/Instruments.

Note : The qualification can be relaxed in the case of suitably experienced candidate.

Technicians : (Physics)

Ist Post : Knowledge and experience of refrigeration machinery, running and maintenance of Liquifiers, etc.

2nd Post : Knowledge of working on workshop machine.

Instrument Mechanic (Physics & Astrophysics)

Experience in Glass Blowing, repair of electrical instruments and refrigeration instruments.

Laboratory Attendants

Should have worked in a Laboratory.

Part-time Gynaecologist

Hospital experience after post-graduate degree or diploma.

The prescribed application forms can be had from the Information Section of the University either personally or by sending a self-addressed envelope (size 13 cm x cm 29) with postage stamps worth Rs. 5.90 Paise.

The candidates will have to produce original documents relating to their age, qualifications, experience, etc. at the time of interview.

Persons already in service in a Govt./Semi Govt./Govt. Aided Organisations should apply through proper channel.

Applications (separate for each post) accompanied by attested copies of degrees, other certificates, marksheets, etc. should be addressed to the **Registrar.** Howerver, applications for the posts marked asterik (*) should be sent directly to the Head of the Department/Centre concerned. The last date prescribed for receipt of the applications is **6th November, 1987.**

Note : 1. Canvassing in any form by or on behalf of the candidate will disqualify.

2. The University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.

Madan Mohan
REGISTRAR

REGIONAL ENGINEERING COLLEGE

HAZRATBAL, SRINAGAR, KASHMIR

Advertisement Notice No. 2 of 1987
Dated 29-9-1987

Situation Vacant

Department	**Post**
Humanities	1. Lecturer (English) (Temporary likely to become permanent).

Qualifications

Minimum

A consistently good academic record with at least Ist OR high second class (B in the seven point scale) at the Master's degree in a relevant subject or an equivalent degree of a foreign University.

Desirable : An M.Phil degree or a recognized degree beyond the Master's level or published work indicating the capacity of a candidate for independent research work ;

OR

A double Master's degree in English and one of the Social Sciences.

Pay Scale : Rs. 700-40-1100-50-1600 (Pre-revised scale)

Applications on plain paper with complete bio-data alongwith attested copies of all academic documents including date of birth certificate should reach the Registrar on or before **20-10-1987.** Applications should be accompained by Postal Order for Rs. 20/- (Rs. 10/- only in the case of SC/ST and Handicapped and socially and educationally backward class candidates).

K.G. Ahmad
REGISTRAR

UNIVERSITY OF JAMMU

VACANT FACULTY POSITIONS

Applications on prescribed form are invited for the following vacant posts so as to reach the undersigned on or before **20 November, 1987**.

1. Professors (Rs. 4500-7330) Laws (Two posts and one each in Geography, Home Science (Human Development) and Physics (High Energy Physics)

2. Reader (Rs. 3700-5300) in Mathematics (Modern Algebra)

3. One Reader (Rs. 3700-5300) and one Lecturer (Rs. 2200-4000) in Home Science (Human Development)

4. One Reader (Rs. 3700-5300) and One Lecturer (Rs. 2200-4000) in Geography in one or more of the following areas :

Regional Planning & Development/ Urban Geography/Population Geography/Quantitative Geography/Agriculture Geography/Physical Geography/ Resource Geography / Environmental Studies / Political Geography / Social Geography / Cartography / Hydrology/ Airphoto Interpretation/Remote Sensing Techniques.

5. Deputy Librarian (Rs. 1200-1900 pre.revised UGC Scale) One post.

6. Lecturer (Rs. 2220-4000) Punjabi (One post)

Prescribed application forms and other details can be had from Shri Vachaspati Sharma, Assistant Registrar (Forms and Stationery) by sending a self-addressed envelope. (25 cms x 10 cms) bearing postage stamps worth Rs. 8/- alongwith crossed postal order worth Rs. 20/- drawn in favour of the Registrar, University of Jammu, Canal Road, Jammu (Tawi) 180001, cashable at Jammu post office.

| Ram Sarup
REGISTRAR

S.N.D.T. WOMEN'S UNIVERSITY

1, NATHIBAI THACKERSEY ROAD
BOMBAY-400 020

Advertisement No. 4

September 29, 1987

Applications are invited in the prescribed forms available at the University Office between 10-30 a.m. to 2-30 p.m. from Monday to Friday and 10-30 a.m. to 12 Noon on Saturday, on payment of Rs. 5/- (M.O/Indian Postal Order/in Cash) for the following posts, to be filled in at the University Departments and its conducted Institutions at Bombay, so as to reach the undersigned on or before fifteen days from the date of its advertisement.

Sr. No. of Post	Post and Name of the Dept./ Institution	No. of Post	Post Under Reserved Category	Medium of Teaching
A.	**C.U. Shah College of Pharmacy Bombay-49**			
1.	Principal and Professor in Pharmaceutics/Pharmacology/ Pharmacognosy	ONE	—	ENG
2.	Reader in Pharmaceutical Chemistry/Analytical Chemistry/Pharmaceutics/ Pharmacognosy	TWO	—	ENG
3.	Lecturer in Pharmaceutical Chemistry/Pharmaceutics	ONE	—	ENG
B.	**Department of Special Education, Bombay-49**			
1.	Head and Professor in Special Education	ONE	—	ENG
C.	**University and its Institutions, Bombay**			
1.	Jr. Stenographers	TEM/PERM	—	—
2.	Typist	TEM/PERM	—	—

Minimum qualifications, salary scales, etc. of the post of teachers are as per approved UGC scales and qualifications. Applications of Scheduled Castes/Tribes DHT/Nomadic Tribes, will be considered as per Government directives.

Dr. (Smt.) Usha Thakkar
REGISTRAR

THE UNIVERSITY OF BURDWAN

**RAJBATI : BURDWAN
WEST BENGAL**

Advertisement No. 6/87-88

Dated : September 25, 1987

Applications in the prescribed form are invited for the following posts :

A. Registrar
B. Assistant Registrar
C. Assistant Controller of Examinations
D. Accounts Officer
E. Estate Officer

Scales of Pay

For A : Rs. 1500-60-1800-100-2000-125/2-2500.

For B to E : Rs. 700-40-1100-50-1600.

The posts carry dearness and other admissible allowances according to the University Rules.

Educational Qualifications & Experience

For post indicated at "A"

(a) Essential

(i) Uniformly good academic record with a B+ Master's Degree or its equivalent.

(ii) At least 15 years' experience in Academic Institutions like University or in an Institute of higher learning of which 5 years must be in high level administration in a University or in an Institute of Post-Graduate Study.

(iii) Age not less than 40 years. Relaxable in the case of exceptionally qualified candidates.

(b) Desirable

(i) A Doctorate Degree or published research work of merit ;

or

(ii) High level administrative experience in a Government or Quasi-Government Organisation or a Good background in administration and management in senior position.

For posts indicated at "B" & "C"

(a) Essential

(i) Uniformly good academic record with a B+ Master's Degree or its equivalent.

(ii) At least 10 years' experience in a Supervisory capacity in a University or a Research Institute or a Government/Quasi-Government organisation.

(iii) Age not below 30 years. Relaxable in case of exceptionally qualified candidates.

(b) Desirable

A degree in Business Management or Law or Statistics or Planning.

Note : Qualification of Master's Degree may be relaxed in the case of candidates possessing uniformly good academic record with at least 7 years' experience as Superintendent or in equivalent post in a University. In that case, the performance records of such candidates for 7 years will also be examined.

For post indicated at "D"

(a) Essential

(i) Uniformly good academic record with a B+ Master's Degree or its equivalent.

(ii) At least 5 years' experience involving supervision, control, planning and management of accounts and audit.

or

preparation of Budget in a Government/Quasi-Government organisation or University/Institute of Higher Learning.

(iii) Age not below 30 years. Relaxable in the case of exceptionally qualified candidates.

(b) Desirable

Membership of Institute of Cost and Chartered Accountants of India or a Degree or Diploma from a recognised Institute of Management or passed S.A.S. Examination. The requirement of Master Degree will be waived in the case of candidate with good academic record having at least 10 years' working experience in senior position in any University or Institute of Higher Learning involving budgeting, maintenance of Accounts and Audit.

For post indicated at "E" -

(a) Essential

(i) A Degree in Law or Management.

(ii) At least 5 years' experience in dealing with matters for upkeeping of an estate including management of properties, control of personnel and the like.

(iii) Age not below 30 years. Relaxable in the case of exceptionally qualified candidates.

(b) Desirable

Experience in gardening/landscaping or experience in inventory control or as legal consultant to a large scale industrial concern.

The choice of the Selection Committee may not necessarily be confined to those who apply formally.

For application form and other information, apply to the Registrar, University of Burdwan with a self-addressed stamped (Re. 1/-) envelope (9"x4").

Last date for submission of application with the requisite fee of Rs. 5/- is **November 14, 1987**.

**P. Banerjee
REGISTRAR**

THE UNIVERSITY OF BURDWAN

**RAJBATI : BURDWAN
WEST BENGAL**

Advertisement No. 5/87-88

Dated : September 25, 1987

Applications in the prescribed form are invited for the following posts in the approved scales of pay (viz. Professorship—Rs. 1500-60 - 1800-100-2000-125/2-2500 : Readership—Rs. 1200-50-1300-60-1900 : Lectureship—Rs. 700-40-1100-50-1600) PLUS dearness and other admissible allowances according to the Rules of the University .

(A) Professor in Bengali —One post
(B) Reader in Sociology —One post
(C) Reader in Political Science —One post
(D) Reader in English —One post
(E) Reader in Economics —One post
(F) Lecturer in Political Science —One post
(G) Lecturer in Business Administration —Two posts
(H) Lecturer in Philosophy —Two posts
(I) Lecturer in Library & Information Science —One post

Minimum Qualification

For Professorship

An eminent scholar with published work of high quality actively engaged in research. About ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

For Readership

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials,

At least five years' experience of teaching and/or research provided that at least three of these years were as lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of Teaching, Research.

For Lectureship

(a) A Doctor's Degree or research work of an equally high standard; and

(b) Good academic record with at least Second Class (C in the seven point scale) Master's Degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing inter-disciplinary Programmes, the degrees in (a) and (b) above may be in relevant subjects :

Provided that if the Selection Committee is of the view that research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increment until he fulfils these requirements.

Desirable Qualifications : Specialisation or Proficiency

For A : Any branch of the subject
For B : Any branch of the subject
For C : International Relations
For D : Shakespeare Criticism and Scholarship/Principles of Literary Criticism (Plato to Sidney)/ Satire (Prose and Verse) Dryden to Byron/Renaissance.
For E : International Economics
For F : Any branch of the subject
For G : **First post :** Management information system
Second post : Any branch of the subject
For H : **First post :** M.A. in Philosophy and capable of teaching both Indian Philosophy and Psychology.
Second post : M.A. in Philosophy or an equivalent traditional Sanskrit Degree.
Must be able to teach original Sanskrit texts in Nyaya-Vaisesika and Vedanta.
For I : Any branch of the subject.

The choice of the Committee may not necessarily be confined to those who apply formally.

For application forms and other particulars please apply to the Registrar, University of Burdwan, Rajbati, Burdwan with a self-addressed stamped (Re. 1/-) envelope (9''x4'').

Last date for submission of application with the requisite fee of Rs 5/- is **November 10, 1987.**

P. Banerjee
REGISTRAR

KUMAUN UNIVERSITY, NAINITAL

Advertisement No. 953 **Dated : 29-9-87**

Applications for the following posts are invited by **7 Nov., 1987** on prescribed form obtainable from the office of the Registrar, Kumaun University, Nainital-263 001 (U.P.) by sending a self-addressed 9'' x 6'' envelope and crossed postal order/Bank Draft for Rs. 7/- payable to the Finance Officer, Kumaun University, Nainital. Money orders are not acceptable. Candidates who have already applied in response of our Advertisement No. 1477 Dt. 21.1.85, 1199 Dt. 25.11.85 and 302 Dt. 30.5.87 for the post of Reader in Law and Advertisement No. 56 Dt. 10.4.87 & No. 302 Dt. 30.5.87 for the post of Professor in Geology need not apply again. They may, however, send the latest addition to their qualifications, changes of address etc. if any.

Sl. No.	Department	Professor 1500-2500	Reader 1200-1900	Lecturer 700-1600	Specialisation
1.	SANSKRIT	1TLR	—	—	—
2.	CHEMISTRY	1TLR	—	1TLR 1 Lv	Inorganic Chemistry for Lect. only
3.	GEOLOGY	1R	—	—	—
4.	PSYCHOLOGY	—	1TLR	—	—
5.	LAW	—	1TLR	—	—

Note : R, implies regular, TLR, implies temporary likely to be regular, Lv, implies leave vacancy.

Qualifications

1. **For the post of Professors**

Either—Eminent Scholarship with published work of high quality and active engagement in research and ten years experience of teaching or Research and experience of guiding research of doctorate level; OR
Outstanding scholarship with established reputation for significant contribution to knowledge.

2. **For the Post of Readers**
   (i) Good academic record with a doctorate degree or equivalent published work and active engagement in research or innovation in teaching methods or production of teaching materials; **and**
   (ii) Five years experience of teaching or research including at least three years as Lecturer or in equivalent position.

3. **For the post of Lecturers**
   (a) a doctorate degree or research work of an equally high standard in relevant subject,
   (b) Consistently good academic record with first or high second class Master's degree or an equivalent degree of a foreign University in relevant subject.

Further details regarding qualifications, service terms and permissible relaxations in qualifications will be provided with application form. Preference will be given to SC/ST and disabled candidates if otherwise considered suitable by the Selection Committee. Application form will not be sent by post after 3.11.87. Applications on plain papers and received after due date are not acceptable.

R.C. Pant
REGISTRAR

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg,
New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension. New Delhi-110055, Tel. 529157

University News

MONDAY, OCTOBER 19, 1987

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Value-Orientation in Higher Education

●

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●

Energy Education

●

Sweeping Powers for Medical Council

●

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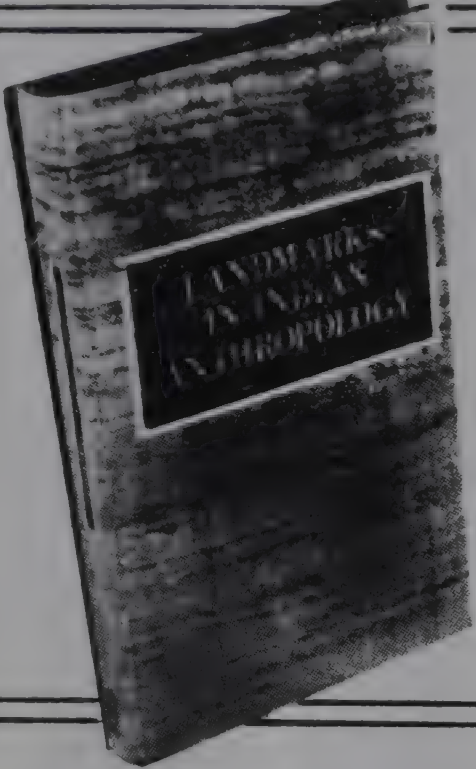

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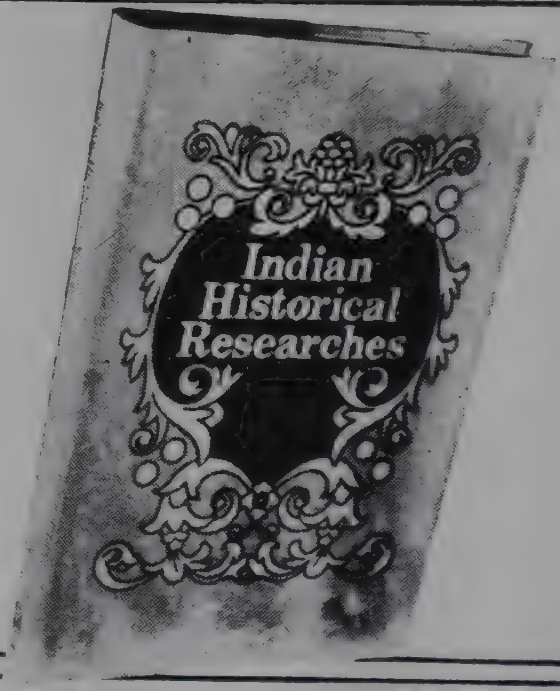

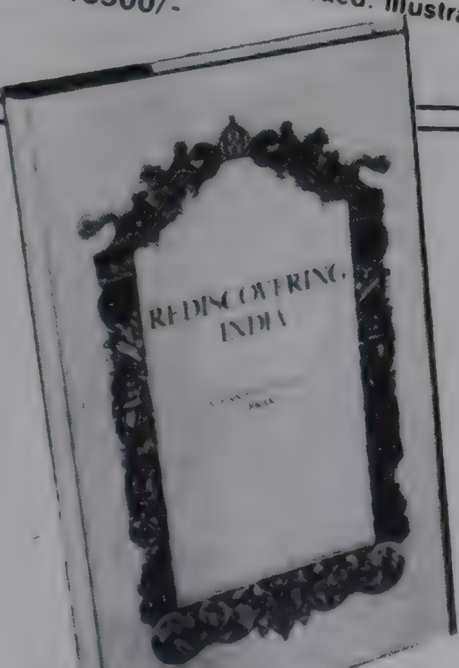

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UNIVERSITY NEWS

VOL. XXV OCTOBER 19
No. 42 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor :
SUTINDER SINGH

Value-Orientation in Higher Education

S.V. Chittibabu*

We live in a time when established beliefs, practices and routines have come to experience the shock of a frightful challenge. Perplexity and doubt, confusion and uncertainty are destabilising the even tenor of life in most parts of the world. Old foundations are breaking up and the new edifice is yet to get into proper shape.

> Turning and turning in the widening gyre
> The falcon cannot hear the falconer;
> Things fall apart, the centre cannot hold;
> Mere anarchy is loosed upon the world,
> The blood dimmed tide is loosed and everywhere
> The ceremony of innocence is drowned;
> The best lack all conviction, while the worst
> Are full of passionate intensity.
>
> —*W.B. Yeats*

The world to-day is at its wits' end, caught up as it is in a crossfire between rank materialism and universal humanism—weapons of destruction being stockpiled on the one side and peace conventions and goodwill meetings being organised on the other. Man presents the picture of a schizophrenic, a split personality, at once a victim of agony and hopelessness and a dreamer of a brave new world. There is a sharp dichotomy between thought and action. As Cardinal Newman puts it, "many a man would seem to live and die upon a dogma, no man will be a martyr for a conclusion." The human race is desperately in need of a living emotional life rich enough to tide over the frustration let loose by materialistic industrialism and deep enough to bring together its members to battle for a fulfilling faith.

Contemporary Educational Montage

The rough and tumble of current populist politics, atrocious corruption not only in high places but up and down the line, the tyranny of muscle power and brutal violence, the defilement of all standards of democratic behaviour, the unconscionable disregard of all principles of moral propriety, the emergence of a new tribe of carpetbaggers—all these have cast their sinister shadows on the academic world. Our Universities and colleges are becoming breeding grounds of aggressive communalism, casteism, sectarianism and regionalism.

(a) Falling Standards of Student Behaviour

It may be contended that our university education has turned out scholars, doctors, engineers, technologists and business executives of quality comparable with the most outstanding products of the best universities of the world. But then against this microscopic minority of quality products, the outweighing majority come out of the domain of higher education with hardly any sense of social commitment or sensitivity to the realities of their environment.

**Former President, Association of Indian Universities, ANBAGAM, 4 Rajaram Mehta Nagar, Madras.*

In most of the professional colleges under the innocuous veneer of ragging, the innocent freshers are subjected to humiliating and savage treatment by a morally depraved section of seniors. They get jettisoned all too suddenly into an inferno of obscenities and perversities. The drug pushers and other fiendish forces of the underworld have penetrated into the crumbling bastions of professional learning.

(b) Teacher Militancy

The piquant opening statement of the Kothari Education Commission's Report that the destiny of India is being shaped in her classrooms is too well known to bear repetition. But the questions now asked are : who is shaping that destiny in the classroom? Are there enough dedicated teachers with the determination, vigour and skill to shape our educational systems in such a manner as to make them function as powerful instruments of political, economic and social change ? It is a thousand pities that dharnas, strikes and slogan shoutings have become the ready weapons of offensive action used by teachers as pressure tactics to achieve their purposes.

(c) Sterility of Curriculum

Our curricular offerings have become jejune and irrelevant, syllabuses are treated as a sort of legal document instead of a guide meant to help the teacher as well as the student. Anything which is outside the syllabuses becomes taboo in teaching and examining. The concept of liberal education as a preparation of the student for free and independent thinking, for critical investigation and evaluation, and for imaginative and constructive thought and action has been unfortunately lost sight of. Gasset, the critic, calls the graduate who is ignorant of the essential system of ideas concerning the world and man as "the new barbarian, a laggard behind the contemporary civilisation archaic, primitive and uncultured." Our higher education has defaulted in inculcating in the student community an understanding of his social heritage and an awareness of the intellectual, aesthetic and moral values expressed in literature and art, religion and philosophy.

(d) Pedagogic Obsolescence

Mass lectures and note-dictation continue to dominate the classroom thereby making instruction deplorably uninspiring and intellectually stultifying. This unhappy situation is further worsened by the undue emphasis placed on dull and selective cramming giving little room for curiosity, problem-solving ability and creative thinking. Except for the classroom contacts between teachers and students, no serious attempts have been made to provide for effective tutorials which alone can enable the learner to discover, to analyse, to judge and to evaluate under the social and moral guidance of his mentor. Seminars and tutorials which stimulate joint discussions at a maturer level and enable the participants to get at the truth through co-operative approach have become few and far between.

(e) The Examination Leviathan

The monster of examination has ruthlessly mayhemmed education at all levels. With all instruction subordinated to its nightmarish stranglehold, rote learning and memorising have acquired a shocking premium with the result, that all initiative and originality in the teacher and students have got smothered. Frittering away their time for most part of the year in fun and frolic, the student-examinees have become adepts in resorting to unethical practices as mass copying, intimidation of invigilators and bribing of evaluators. External examinations have crippled the quality of work in higher education and corrupted the moral standards of university life. The whole process of higher education has become "warped, disoriented and dysfunctional."

Higher Education at the Cross Roads

Higher education has come to a stage when it has to decide the direction, it must take from now if it is not to lose its credibility as a mission-oriented agency in pursuit of truth and excellence. Because of its having got entangled in the spider web of materialism and factionalism, demagoguery and knavery, egotism and hypocrisy, greed and hatred, it has forfeited its claims to be regarded as the sacred fountain of ideas and idealism. Our revered spiritual mentor, Bhagwan Sri Sathya Sai Baba, the grand designer of the path-breaking programme of 'Education in Human Values' delivering the Benediction Address at the Fifth Convocation of Sri Sathya Sai Institute of Higher Learning on November 22, 1986, had made this sobering comment : "Science and Technology have expanded vastly to-day. Their gifts have made life more comfortable and pleasant. But they have brought with them grief, loss and calamity in far greater degree...More than all, they have bred domination and concentration of authority...The emergence of discordant notes has silenced the call of the divine from within man......Man has become so stupid that he has neither fear of sin nor love for God. How can then he be secure in peace and escape from catastrophe ?"

The point that Bhagwan Baba hammers in is that the spectacular advances of science and technology have tended to brush aside the life of the mind and spirit. While a few may persevere with selfless devotion in the pursuit of higher values, an overwhelming majority is stupidly content with trifles or power and pelf. We have, therefore, to explore the great mastery of life with the antennae of our instincts, emotions and intuition and examine with imagination and courage the values that we cherish.

Our Universities should play a decisive role in resolving the present moral crisis confronted by higher education. They cannot run away from the armageddon throwing up their hands in despair as if they have lost the battle. The words of Prof. K. G. Saiyidain are worth recalling in this context : "If the universities will borrow their standards and criteria from the stock market or the political platform and will not stand up against the many trends which are corroding man's life socially and morally—subservience to power, moral laryngitis, disregard for scholarship, lack of respect for truth, conformity to customs and winds of fashion, the cult of the 'organisation man' the increasing tempo of indiscipline and violence in life—they will fail in their basic puspose." Socially, intellectually and morally, every centre of higher learning has to become the prototype of the good society of the future where the right values reign supreme. Its moral and spiritual leadership should prevail under all conditions and at all times. But if the salt hath lost its savour—that is, the quality of leadership gets devalued—we may as well wonder wherewith it will be salteth.

The Talisman of Value-Orientation

If higher education is to stand upto the stresses and strains, limitations and compulsions which are the outcome of its failure to adhere to its avowed objectives and ideals and if it is to achieve a breakthrough from its present entanglement, a dynamic, vigorous and pace-setting programme of value-orientation is what is most urgently needed for implementation in all the universities and colleges. Recognising this desideratum, the National Policy on Education 1986, has called for an immediate reconstruction of the curriculum in such a way as to make the understanding, appreciation and practice of social and moral values an integral part of the process of Education. Its raison d'etre is reflected in the following emphasis it has laid on value-imbued higher education :

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"8.4 The growing concern over the erosion of essential values and an increasing cynicism in society has brought to focus the need for readjustment in the curriculum in order to make education a forceful tool for the cultivation of social and moral education.

8.5 In our culturally plural society, education should foster universal and eternal values oriented towards the unity and integration of our people. Such value education should help eliminate obscurantism, religious fanaticism, violence, superstition and fatalism.

8.6 Apart from this combative role, value education has a profound positive content based on our heritage, natural goals and universal perceptions. It should lay primary emphasis on this aspect."

In the light of the above unambiguous stress placed on value-based education, it becomes our primary commitment to see that higher education becomes a well-proportioned preparation for the student to live a full life with that creative human spirit which is in constant search for more truth, more goodness, more beauty and more light. For man's *true* life, as Bertrand Russell has also argued, consists not in the satiation of his pressing physical wants, but "in art and thought and love, in the creation and contemplation of beauty and in the scientific understanding of the world."

The Amalgam of Knowledge and Values

It is universally recognised that knowledge and values are not watertight compartments. The true educator describes the meaningful continuity between the education of the mind and education in values and the resulting enrichment of personal and social life. Education needs, therefore, to be looked upon as a single, though, intricately complex and continuous activity in which mental, social and moral training is wholly involved. In the words of Tagore, "knowledge must be acquired and imparted—with a passion, an integrity, a sense of detachment and in a spirit of fellowship." It is this kind of knowledge that paves the way for the emergence of a truly human society in which values are honoured and put into practice—values of freedom, truth, justice, integrity, fraternity, mutual tolerance and love. As Bronowski pinpoints perspicaciously, "a society holds together by the respect which man gives to man; it fails when its concept of man fails."

Universities should strive to keep this perspective in view without getting lost in mere academic exercises which do not define the entirety of its magnificent function which is to make man a creator, to inculcate values that lend meaning and grace to his life as well as dignity and stability to his society. They should make knowledge pulsate with intellectual excitement and passion and stir up the fabric of the learner's personality. The degree of success of a university has to be measured against this exacting challenge.

The Paradigm of Sri Sathya Sai Institute of Higher Learning

Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam has come upon the educational scene to accept the gauntlet and prove that given the will and spirit of go-aheadedness, a university can prove that value-orientation is not a chimera but a pragmatic programme of action replete with immeasurable potential for transmitting education into an energising force for achieving the over-arching purpose of propelling, uniting and guiding both teachers and students along a line of valid direction with humility in their hearts and compassion for mankind. This Institute exemplifies Bhagwan Baba's vision, expectations and hopes. Its uniqueness consists in its cultural fusion, exchange and synthesis cutting across communal and religious barricades, state borders and even national frontiers. One can see a mini-India in its campus in all its cultural and spiritual efflorescence. The Institute attempts what is technically possible and ideologically desirable, the nexus between science and spirituality and the imaginative formulation of Awareness and Foundation courses and self-reliance projects that make the interplay between head and heart a truly joyous and illuminating experience. The five unfailing ethical stallions that will lead the graceful chariot of the Institute with Bhagwan Baba as the omniscient Charioteer towards its set goals are **Sathya** (Truth), **Dharma** (Right Conduct), **Shanthi** (Peace), **Prema** (Love) and **Ahimsa** (Non-Violence). These five broad universal values encompass several other important values like good manners, tidiness, self-control, comradeship, co-operation, tolerance, secular outlook, self confidence, self reliance, self sacrifice, service to people, etc. The Stupa in the centre of Prasanthi Nilayam, the Abode of Absolute Peace, proclaims unto the world at large the essential unity of all religions and faiths—a unity that harmonizes them and gives them reality. The Sri Sathya Sai Institute of Higher Learning stands out as a lighthouse nonpareil, amidst the encircling gloom, and an oasis of hope amidst a desert of emptiness and forlornness. Let the trail blazed by it help other seminaries of higher learning to chart out a flexible and feasible Agenda f Action.

Steps towards Value Orientation

1. Universities should openly reaffirm their fait in value orientation as both a palladium and a mora elixir and disseminate the message which is loud an clear among the academic community and the public They should plan and perform, resolve and execut with firmness of purpose;

2. The curriculum should be so revamped as t make integrated approach its hallmark. Awareness and Foundation courses should be woven into th tapestry of the curriculum with a view to promoting an understanding of controlling principles and chie causes of phenomena, objective critical enquiry, crea tive thinking, an appreciation of unity in diversity, a liberal outlook and a humanistic attitude. A discerning knowledge of the history of Indian culture should be insisted upon. The unique feature of India's cultural heritage, viz. its unity and continuity down through the ages should be brought home;

3. The synthesis of science and spirituality and the blending of material prosperity with human values should be duly emphasised;

4. A climate of intellectual and emotional dimensions to generate sentiments and feelings of national solidarity and unity should be created;

5. Necessary reading materials containing the sayings and writings of eminent thinkers, philosophers and seers should be specially prepared and made available for both teachers as well as students;

6. Festivals, games, dramas, exhibitions of artistic creations, etc. should be organised periodically;

7. Documentaries on India's cultural treasures and natural wealth should be obtained and shown to the academic fraternity;

8. Inter-university sports and cultural meets that foster desirable behaviour patterns and the tolerance of differences in inter-group relations are presently arranged by the Association of Indian Universities with funds provided by the Ministry of Sports and Youth Affairs. This healthy trend should be vigorously encouraged and made to gather tempo;

9. The N.C.C. and the N.S.S. should be reinvigorated with adequate funds and resources so that they may develop leadership, character, friendship, team-spirit and the ideal of service. Definite action should be taken through Students' Welfare Services to make the campus life of students pleasurable and stimulating ;

10. As the teachers constitute the sheet anchor of any academic programme, they need to be intellectually, emotionally and spiritually reanimated for which suitable Refresher Courses and Pre-service and In-service Training programmes would be necessary. Their motivation is a must for implementing the policy for value development. They should be made to redesign their pedagogic techniques for making their teaching evocative and responsive to the demands of value-based education ;

11. The present examination machinery needs to be thoroughly overhauled, nay, restructured drastically if it is not to lead higher education into a welter of greater chaos. It has to be refurbished with objective methods of testing intelligence, aptitude, achievements and personality traits of students in the context of the programme of value orientation; and

12. As only an autonomous institution unfettered by regimentation of ideas and pressure of power or party politics can pursue truth fearlessly and build up in its teachers and students qualities of head and heart and habits of uninhibited thinking and searching enquiry, a phased programme should be initiated by universities to confer autonomous status on colleges so that they may play a positive role in making value orientation a reality.

To Act and not Dither

Have we not seen some persons who are pathetic, spineless characters, the embodiment of inert aspirations fondly building castles in the air or dreaming of a holiday in Ooty or Srinagar but simply dithering and doing nothing about it ? But universities can ill-afford to vacillate. Merely assembling, discussing and passing resolutions will not cut any ice. Demosthenes was once asked: "what is the most important quality in oratory?" and he replied : "Action, Action, Action." If the programme of value orientation in higher education is to take off from the ground, planned action alone can be the prime mover. As Edward Irving has cautioned, "procrastination is the kidnapper of souls and the recruiting officer of hell". Any further delay will be a moral defection. The task is no doubt a formidable one which may sometimes prove tantalizing and heartbreaking. But, as Dr. Radhakrishna says, "tears and smiles make the music of life". The ends we have set before ourselves are worthy and commendable. We are to sow a spark and reap a star. May we then play our role in this grand adventure responsibly and exemplarily. Let us not forget that we have the rare Blessing of Bhagwan Baba to enable us to reap a 'Golden Harvest". ☐

National Conference on Role of Universities in Implementation of New Education Policy

The Association of Indian Universities will organise, in collaboration with Osmania University, a National Conference on Role of Universities in Implementation of New Education Policy on December 18 & 19, 1987 at Hyderabad.

The **New Education Policy (NEP)** visualises the role of higher education as providing people with an opportunity to reflect on the critical, social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills.

The role of universities is crucial in the matter since one of the important functions of universities and institutes of higher learning is to provide specialized scientific and technical skills, imparting of knowledge, contributing to every sector of national development and improving social conduct and behaviour. Thus, a major share of responsibilities, as envisaged in the NEP, rests with the universities and other educational institutions. It becomes imperative for the educational community to try to define some of the important issues involved in the management of higher education, the efficiency improvement, the financing of higher education, youth services and physical fitness programmes, education in human values, etc. in the light of the NEP recommendations.

The deliberations of the Conference will focus on the following topics :

I. **Management of Higher Education**
II. **Improvement in Efficiency**
III. **New Strategies in Higher Education**

PROGRAMME

December 18, 1987 (Friday)

10.00 A.M.	INAUGURATION
11.30 to 1.00	SESSION I
2.00 to 4.30	SESSION II

December 19, 1987 (Saturday)

9.00 to 11.30 A.M.	SESSION III
12.00 to 1.30	SESSION IV
2.30 to 4.30	SESSION V (Plenary)

Convenor

Dr. V. Natarajan
Project Director (Exams.)
Association of Indian Universities
AIU House, 16 Kotla Marg
New Delhi 110 002.
Telephone : 3310059
Telex : 31-5578 AIU IN
Telegram : 'ASINDU'

EROSION OF DESIRE TO GIVE

Amrik Singh*

Recently, after 40 years of India's independence, quite a number of people attempted to strike a balance-sheet of what we had gained and what we had lost during these four decades. One leading newspaper got a whole series of articles written on the state of the nation.

Most of the writing done on this occasion is in the vein that there have been pluses and minuses. In certain sectors of activity the country has done well, in certain others, it has not done so well. It has also been said that there have been a number of gaps and omissions. Several people have noticed the change of ethos that has taken place since the departure of the British. It has been difficult, however, to be precise about what has gone wrong.

Something has gone wrong, most people admit, but what precisely has gone wrong is difficult to identify. Everyone who thinks about this problem has his own answer to this question. I too had some kind of a vague answer in my mind. But a book just published has enabled me to be a little more precise. I refer to Asok Mitra's book **Three Score and Ten**, published by Mandira from Calcutta.

As several people may recall, he was one of the more distinguished members of the ICS which continued to serve the country after 1947. As Registrar-General of the Census, he did a creditable job. In consequence, he emerged as a leading demographer in the country. Towards the end of his career, he wound up with a couple of other assignments including a stint at the Jawaharlal Nehru University, New Delhi.

Having crossed the biblical age of three score and ten, he had the not uncommon idea on writing an autobiography. He was decided to divide that into three parts. Only the first part sub-title The First Score and Three, has appeared. In this slim volume of 126 pages he describes his childhood, early schooling, the process of growing into an adult, college and university education and entry into the ICS.

The book makes interesting reading but it is not particularly exciting. At the same time, the book has two points of strength which mark it out as somewhat unusual. One of them can be dealt with somewhat easily. As a bright young man at the University of Calcutta, he got drawn into the group which was bringing the well-known literary journal, **Parichay**, and got to know some of the leading writers of those days. Among them were Bishnu Dey, Sudhindranath Datta, Buddhadeb Basu and Samar Sen. Mitra's book glows with excitement when he talks of those dizzy days when he was a member of the avant garde literary circles and was on informal terms with a number of the influential writers and artists of the post-Tagore era.

It is the second aspect of the book which has moved me deeply and helped me to identify what was it that died in '47. The point is made clearly in the description of his student days. Talking of his school, for instance, he says :

> There is nothing like a guru. You can learn a thing by yourself but it is the guru who teaches you how to relate it to defferent universes of discourse. This latter kind of grooming was to await my later gurus. This was but the beginning and I needed gurus who would furnish me with basic knowledge. This my school teachers were qualified to do very competently...Thus I spent an extra year in school which evened out the double promotion I had gained in 1926. I took the matriculation examination in 1932 on just completing fifteen. But right from October 1930 till February, 1932, Beni Babu groomed me as a labour of love every evening at home in almost all the subjects. Even if one did not count this sacrifice in terms of money, the sheer physical labour of it over a full year and half for a headmaster would be unthinkable today.

There are many such things that he says about his teachers at the school level. But what lends warmth to his writing is his series of portraits of his college teachers. Almost half-a-dozen of them are recalled with emotion and vividness.There are repeated references to the way academic life was organised and how the teachers were intimately involved in it. For instance, he says, "honours schedules were long and tight with classes, tutorials and library work. It was almost a cloistered existence. But the teachers worked harder than you, and you could not complain nor get away".

**Former Secretary, Association of Indian Universities, 2/26 Sarva Priya Vihar, New Delhi-110016.*

Elsewhere, he says :

> To think of so much care and solicitude wasted without a thought on a young man who repaid all this by running away for a mess of pottage. I have been a teacher in my later life. I have rejoiced when my pupils excelled me. But I do not think I ever spent on them outside hours a fraction of time that my honours teachers had spent on me ungrudgingly and that too not at my seeking throughout my student days.

In his chapter on the Presidency College he writes not only about his teachers. All kinds of other things are also referred to, for that was a period (1932-36) when a good deal was happening in the rest of the world. He talks of the salt satyagraha, the Kisan Sabha Movement in Bangal, the Round Table Conference, the Earthquake in Bihar, Gandhi's approach to untouchability, the terrorist movement and a number of other things. Whatever, he says is perceptive and balanced. But, what makes the book come alive is his description of the impact that his teachers made on him and the role they played in shaping him.

When he stood second in his honours, one of his professors, the legendary P.C. Ghosh, went over to see his father and personally broke the news to him about his success. After that he took him home and before he knew what has happening he had virtually taken charge of Ashok Mitra. For the next three years he served what is called some kind of a 'discipleship' under him. Recalling the attention bestowed upon him, he comments: "I do not think my own involvement with my best students in the M. Phil and Ph.D. at JNU was even half as wideranging. No wonder that I decided that my gurus were setting up impossible enough standards for me in the teaching profession, and thought of a career in the civil service instead".

This is strongly put but nothing brings out his indebtedness to his teachers more decisively than the following extract :

> I had not studied history in college. But I had met Susobhan Sarkar at the Parichaya Adda. I took courage one Sunday morning and visited him in his first-storey flat at Ekdalia Road. He said he would think it over and asked me to come next Sunday. The following Sunday when I called again, he asked me to come from the first of the month after next. I forget whether it was December 1936 or January 1937.
>
> Just think of the investment and preparation Sushobhan Sarkar made to be able to teach a lone pupil ! He did not teach at college all the periods I wanted to offer. Therefore, he bought the whole set of the Oxford history of England for the period 1685-1919. Plus Ramsay Muir and Trevelyan. He had also gone in for new standard texts on European history for the period 1714-1919 plus Indian history for the medieval and modern periods. He spoke for about an hour on an average of three mornings in the week. He taught me more about the essential structure of English speech than even my professors of English, and certainly of the principle that less is more. The six papers of history in the civil service examination fetched me, if I remember right, 430 out of 600, and

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none of the six answer papers contained more than eight pages of close writing.

It only remains to be added that Sushobhan Sarkar has been one of the more outstanding historians of modern India in recent years. His work on the Bengal renaissance is well-known as also his reputation as a teacher. Not only was he a legend in his own life time, he continues to be a legend even today. Several years after his death, one has only to meet any one of his old students and see the sparks of affection and gratitude in their eyes.

This is what constitutes the ultimate reward of a teacher. This is precisely what comes through in the writing of Asok Mitra even half a century later when he refers to the attention lavished upon "a lone pupil". Teaching is teaching, whether there is one pupil or a number of them. The point about teaching is the act of communication and the conviction that in doing so one is lighting another lamp. Nothing is taken away from the teacher. He continues to be as knowledgeable as he always was. That is why it is contended that a teacher is not like a pitcher who empties himself out. Instead it is recognised that a teacher is like a lamp who lights another lamp.

The core of this process of a lamp lighting another comes from the fact that teaching, in essence, is an act of joy. It is not a chore imposed upon someone. On the contrary, it is a liberating and creative act. It releases something within the teacher and gives him the feeling that nothing is more rewarding than to be able to give. What he gives does not diminish him though it enriches others.

Those who can enrich others, especially the ones who are still at the formative stage, give something to their students which is unique and precious and unforgettable. That is why it is generally said that behind every successful man or woman is a loving mother and a caring teacher. It may be classroom teacher or it may be a friend or a relation. But there always has to be somebody to whom one can look up to and it is that model, or a variation of it, which eventually shapes one's personality and character. This is a role which a teacher, whether he likes it or not, has to play and cannot but play.

Looking at what is happening all around, one wonders what has happened and where we have gone wrong. There is no clear answer. A reading of this book has however, given me a clue. To say anything more than that would be to claim too much.

What died in '47, it seems to me, was the desire give. The desire to take, or to put it more strongly the desire to grab, has always existed in every society What has happened since '47 is that it has becom more assertive and more widespread. That everyone has the desire to take goes without saying. But it i a teacher alone whose desire to give is a part of hi profession. Perhaps this statement needs to b qualified.

Several other kinds of people also have the desire to give, a holy man, for instance, or a voluntary worker. But there is a difference. To be a holy man is not to follow a profession and one cannot adopt it therefore. Similarly voluntary work is the outcome of a certain attitude of mind and there may be people who are engaged in this task on a wholetime basis, but then voluntary work is not a profession in the sense teaching is.

Teaching is a profession with centuries of tradition behind it. The fundamentals of this tradition are that the desire to give is a part of the vocation that one adopts. This is not to suggest that being remunerated for what one does is unimportant. It is important, it is a part of the professional framework in term of which one works. But there has to be some kind of a proportion between what one gets and what one gives. It is this proportion which in recent years has got not only disturbed but even disrupted.

That this desire to give has died, or almost so, is a statement that will not be seriously challenged, one hopes. Whether it has died to the extent that is suggested or not is another question. In any case, to put it no more strongly, something vital is missing from the profession of teaching today.

Some bit of it still endures and there are individuals who feel committed to what they are doing and find joy in giving to their students what they got from their teachers. In a sense, thus, the spirit is still surviving but then it is much weaker than ever before. This is a fact of life, those who choose to question it look at what others are getting, and quite a few of them without having deserved it, but do not look at themselves and what they are expected to give and how they are either unable or unwilling (or both) to give.

In this situation one can legitimately ask : Are we being fair to the generation that is now growing up?

☐

ENERGY EDUCATION

Some Sociological Considerations

Satya Pal Ruhela*

> "The Earth has enough for every man's need, but not for every man's greed."
>
> —*Gandhiji*

> "What we destroy, we can't replace. Nor can nature—not at this speed. It has taken millions of years for nature to stock up our present supply of minerals and fossil fuels but it will take us only a few centuries to run through. As pillagers, and predators, we surpass all other species just as we do as thinkers and creators. Only our thinking and creative abilities are poor compared to our capacity for unthinking destruction."
>
> —*Manorama Year Book 1986*

This paper seeks to highlight three aspects—sources of energy and the fast approaching energy crisis in the world; desirable objectives of a functional programme of energy education; and sociological considerations which educators may profitably keep in mind while imparting energy education to students in India.

I

Sources of Energy and the Energy Crisis

At present, the most commonly used sources of energy are firewood, coal, oil and electricity. These are briefly described as under.

Firewood

It is said to be the third most important sources of energy in the world. Nearly half of the timber felled throughout the world is consumed as fuel. It is estimated that out of a total of wood harvest of 2 billion cubic metres per year, 990 million go for fuel and the rest is used in industry. So although on the global basis the situation seems to be satisfactory, in fact it is just the opposite in the underdeveloped countries. It is proved by concrete evidence. In the USA 98% of the wood produced is used up in industry and only 2% is consumed as firewood. On the other hand, with more than 80% of the population dependent entirely on firewood, India has only 23% of its land under forest. The total consumption of wood in India is about 211 million cubic metres. For fuel alone 184 million cubic metres is used. The annual growth of timber is not more than 50 million cubic metres which means that consumption is four times as much as production.

Coal

The exploitation of coal has been going on since the industrial revolution in Europe, and now the global situation in this regard has become quite alarming. While the coal resources of the world are limited the nations are trying to dig out as much coal impatiently as possible. We are informed that production of coal has increased 6.9% in China (to 640 million tons) and 9% in India (to 134 million tons). Other areas that reported increases included Eastern Europe, Canada and Australia. Brazil, Columbia and Mexico have had big relative increases but they were based on small absolute outputs of about 5 million to 7 million tons. World production of brown coal also increased; output in 1982 was reported to be 1,061,000,000 tons. In India, the production of coal by 1989-90 is expected to go up to 226 million tons. We are informed that the total coal reserves of India are now around 126,105 million tons. Almost all of our small and big industries and railways are dependent on coal.

Oil

The total oil (Petroleum) production in the world in 1984 was estimated to be 2,017 million tons. Of these, North America's share is 579 million tons, Caribbean area 1.01 million tons, other Latin American countries 1.98 million tons, Middle East countries 5.27 million tons, African countries 1.78 million tons, USSR and Eastern European countries 6.37 million tons and China 1 10 million tons. The total production of crude oil in India is expected to be

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29.43 MMT. The consumption of petroleum products during 1984-85 was expected to be around 38.44 million tons, recording a growth of 7.2% over last years consumption. The fast growing shortage and ever increasing prices of petroleum are causing grave concern to all nations, especially to the developing countries. It is feared that the world resources of oil may be completely exhausted in the next 20-30 years, and then we may have no petrol to run our cars and scooters. At present about 30% of India's current crude needs are met by imports; the proportion may rise to about 60% by 1990.

Electricity

We do not have statistics about the production of electricity in the world. In India, the target for power generation during 1984-85 was fixed at 154 billion units. Of this 98.5 billion units were to be generated by thermal stations, 3.5 billion units by nuclear plants and 52 billion units by hydro stations.

Nuclear Power

Nuclear Power accounted for 310 GW(E) or 11% of the world's electricity generating capacity by 1985. Nuclear power generation was initiated in India in 1969 with the commencement of the Tarapur Atomic Power Station with an installed capacity of 420 MW. The following Nuclear Power stations are the recent ones :

Rajasthan Atomic Power Station, Kota
—2x220 MW
Madras Atomic Power Station near Kalpakam
—2x235
Narora Atomic Power Station, Narora (UP)
—2x235 MW

While there is a lot of talk of nuclear energy these days, it should not be forgotton that its production is both costly and difficult. It has been reported that for the next two decades India will continue to maintain nuclear power stations of 235 MW capacity even though all over the world nuclear power units sizes are in the 900-1300 MW range.

In view of the fast depleting resources of firewood, coal and petroleum, scientists have for the last few years been advocating the harnessing of non-conventional sources of energy like Wind energy, Garbage energy, Geothermal energy and Solar energy.

Non-Conventional Sources of Energy

Wind Energy

The US, Sweden and Denmark are the leading users of wind power in the world. The US spent about 200 million dollars between 1973 and 1980 for developing wind-generators. It is planning small generators suitable for homes as well as big turbines which can provide electricity to 2500 average American homes.

A very recent report published in **Indian Express** of July 4,1987, tells us about the plans of the Himachal Pradesh Government to harness wind energy in our country soon :

> ‘Preliminary reports indicate that Himachal Pradesh has immense potential to generate electricity from wind. Two aero-generators are likely to be commissioned soon. In addition, two more wind energy demonstration pilot projects have been proposed at Shogi and Tara Devi.
>
> ...At Fagu, about 23 km from Shimla, engineers of the Himachal Pradesh State Electricity Board (HPSEB) have measured wind velocity, Fagu has recorded a wind velocity of about 90 km per hour.
>
> ...The exploitation of wind power, a cheap and pollution-free energy source is being undertaken for electrification of remote villages keeping battery banks as a buffer. It is also to be used as power supply for communication stations, community centres and for street lighting. Power from wind is proposed to be utilised for pumping out water both for irrigation and drinking purposes.''

Garbage Energy

Organic wastes can be converted into energy by various methods, the most promising of which is direct combustion and the conversion of such wastes into alcohol, methene or other storable fuels. A survey of garbage burning plants in 1978 showed that as many as three fourths of the 262 plants were located in Europe; most of the remainders were in Japan, the US having only 6 such plants. Near Rotterdam the world's largest single waste burning facility burns more than a million tons of waste annually to fuel a 55-megawatt electricity generating plant. Waste from many industries—wood waste from forest-based industries, bagasse from sugar industries and cheese, whey, citrus and vegetable wastes from food industries—have been found useful in producing fuel grade alcohol. It has been estimated that four-fifths of the garbage wastes in US can be converted into 500 million gallons ethanol per year or 0.5% of the gascline consumption in US.

On the farm front livestock manure and crop-residues, constitute a huge and self-replenishing source of energy. New technologies have been evolved whereby farm wastes can be converted into energy, namely, methene, a natural gas, and the residual waste can be used as fertiliser. This process of digesting livestock manure to produce methene leaving a sludge that formed an excellent manure was first developed in China in 1978. There are about 7 million methene digesters of this type operating in China.

The Indian Biogas (Gobar gas) technology follows almost the same pattern. The Government of India attaches considerable importance to it and a number of gobar gas plants have come up in villages and towns.

Geothermal Energy

Geothermal heat or heat generated in the bowels of the Earth is being reinforced by radioactivity. The heat remains stored up in the interior of the earth, because there are no natural outlets for escape, except the volcanoes. This stock is gigantic and promises to be an inexhaustible source of energy. The rich geothermal resources lie along the so called Ring of Fire that stretches from New Zealand up through New Guinea, the Philippines, Japan, Western Siberia and then down the Western US, through Mexico, Central America and the West Coast and South America. Production of geothermal electricity is still very limited. However, the US, Italy, New Zealand, Japan and Philippines have already started. Total capacity generated by these countries in 1979 was around 2000 MW. By 1983 the US expected to produce about 3% of its electricity this way. The USSR is planning a super-geothermal plant, based on the Avashinski valcano on the Kamchatta Peninsula, at a depth of 3.5 km. (11,500 ft.) which will supply 5,000 MW geothermal power for 500 years. India does not have any such plans.

Solar Energy

Solar energy can be utilised directly or indirectly—directly for heating or similar purpose or indirectly as a generator of electricity. Solar heater is a simple device by which we can use the sun's electricity. Solar heater is a simple device by which we can use the sun's rays directly for heating. With slight alterations in the mechanism, the solar heater can be used to cook food or distil water. Israel is the only country in the world that has put this technique into use on a national scale. Today roughly 10% of all the Isreal households rely entirely on solar power. It is expected that by 1990 solar heating will increase from 400,000 to 650,000 units. All public buildings are by law compelled to incorporate solar heating systems.

In Asia, the only country that has caught on is Japan. In 1980, over 1.6 million buildings in Japan were using solar heaters. It is planned to increase the number to 7.8 million by 1990 and 12 million by 1995. This means that by 1995, 30% of all buildings in Japan will be fitted with roof top collectors. India receives substantial quantitites of solar radiation and the number of sunny days in the year are high. The minimum radiation is in December and for most locations it is about 500 cal/per sq cm/day. The intensity and distribution of solar energy are favourable for its use in India. The government attaches considerable importance to harnessing this source of energy. It is selling solar heaters at subsidised rates in a number of cities.

II

Objectives of a Functional Programme of Energy Education

It is high time that education about the sources, uses, misuses and crisis of energy is imparted to the beneficiaries of formal as well non-formal systems of education in India, and serious efforts are made to develop proper values and attitudes in them which are functional to the conservation and judicious use of energy reserves and the minimisation of environmental pollution.

The specific objectives of such a programme of Energy education may be as under :

1. To inform the learners all about the various kinds of conventional and non-conventional energy—the extent and locations of their availability, their present stocks and future availability possibilities; their uses and abuses, and how human society, science, progress and future—all are inextricably linked with energy questions.

2. To make the learners understand and appreciate the importance of conservation of energy and of the maintenance of the ecological balance.

3. To develop in the learners functional values and attitudes in regard to the use of the various kinds of energy and the preservation of the ecological balance.

4. To make the learners understand and appreciate the impending crisis related to the conventional sources of energy and what havoc it is going to play in our lives in the next 2-3 decades itself.

5. To make the learners appreciate the practical ideas of Gandhiji and Ivan Illich in order to save the energy resources and preserve environmental purity and ecological balance.

In **Desooling Society**, Illich has rightly advocated the use of more and more of bicycles instead of cars and scooters. Recent developments in regard to the production of a light aluminium body bullock cart with tyre wheels in India and electricity and battery operated cars in India are promising developments.

III

Some Sociological Considerations

Based on our socio-anthropological observations of the Indian society, the following points are offered for the consideration of the Energy education educators.

1. In Indian villages (80% of Indians live in villages) people invariably use firewood for cooking. Their *chulhas* are of old type; they consume more fuel and a lot of fuel is wasted in them. New type of *chulahs* are sometimes advocated in villages, but, there is so far no extensive publicity of them.

2. Hindus, Sikhs and Jains who constitute 85.08% of India's population burn their dead in wood ; each cremation needs about 1.5 quintals of dry firewood. They could be educated to save wood energy by opting for electric cremation.

3. Indian railways have been using huge quantities of coal and some diesel. It is only on a few tracts that they use electricity.

4. The novo rich and affluent people of our society consume large quantities of energy in the form of petrol on their cars and scooters, and electricity in their homes. Over consumption of these energy forms has become their status symbol, it seems. They should be taught to be modest and economical in their energy consumption.

5. While there is so much of talk about crisis coming soon, our school and college teachers and our textbooks are completely oblivios of it. They must be made aware of it at the earlist, and our curricula at school and college levels should incorporate units on energy.

6. Our mass media (films, TV radio, news paper s) are obsessed with the themes of sex, violence, crime, narcotics, slums, smuggling, politics, etc. but not with the energy crisis. Suitable programmes, articles, etc. should be put up by them regularly to educate the masses on energy matters.

7. Widespread corruption in State Forest Departments is responsible for the fast denudation of our forests in UP, HP and other states. It should be curbed.

8. Movements such as Chipco and Vanamahotasava should be vigorously and sincerely launched involving all sections of people.

9. Due to the lack of foresight and insensitivity on the part of our panchayats and municipal personnel, huge amounts of garbage lie just scattered here and there. There are few projects to use it to produce biogas and other forms of energy.

10. Orthodox Hindu families prefer not to use biogas for cooking food.

11. While the solar cookers have started selling in India, there is still very less publicity and their subsidised prices are still on the high side.

12. Our Vedio literature and folklores of almost all the regions of India greatly emphasize respect to vegetation, tree worship, planting trees on happy occasions, and taboo on felling certain trees. Such useful ancient values should be re-emphasised now.

13. Efficient and fast future transport systems should be developed in cities and towns so that people may be demotivated to own personal vehicles and thus save energy.

14. Users of scooters and cars generally do not know how to save petrol while driving. They should be educated by TV and other mass media.

15. Users of LPG gas also need to be educated likewise in saving the cooking gas.

16. Use of simple energy saving tools and appliances should be re-emphasised. Thus, hand fans instead of electricity fans, cycles instead of scooters, bullock carts instead of trucks and tempos, earthen pitchers instead of refrigerators and water coolar and solar heaters, gobar gas instead of sophisticated cooking ranges should be popularised. To bring about such a change in attitudes and habitsof the masses, the leaders and high ups will have to set examples, for downwards filteration theory works well.

17. Architects and builders have recently suggested that instead of using cement if mud and locally available materials and bricks are used, houses can be built cheaply, and they can be far more airy, cooler, full of light and functional. They will naturally then need less electricity in cooling and lighting. House builders ought to be educated on these lines by the mass media, especially the TV.

18. A widespread social consciousness has to be developed in our people through formal, informal and non-formal channels of education in regard to energy use. All wasteful habits as such should be avoided. Energy resources should be used miserly and judiciously and false vanity in overspending them should be looked down upon, even punished. Innovative practices aimed at economical and optimal use of electricity and oil should be encouraged. Public opinion should be mobilised for fruitful actions. Individualistic tendencies should be discouraged and considerations of public cooperation and public welfare emphasised.

All these questions have social bearing. Simply teaching about energy crisis in the form of an additional subject won't work. An attitudinal change has to be brought about in the vast masses of the people for which sociological, psychological and anthropological insights should be made use of.

There is going to be an energy crisis, no doubt, if we do not take adequate preventive measures today. But there is no need for despondency. Let us take inspiration from these words of G.R. Whitefield quoted in the Survival Newsletter 975 : I :

> "We are indigenous and adaptable species, and now we have the power to destroy life on our planet, we have perhaps the wisdom to save it. We are engineering the planet, whether we like it or not, so we had better do it well, controlling our own growth, limiting our greed and getting back to ways of life that can be sustained indefinitely." ☐

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CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
November 16-20, 1987	Seventh National Symposium on Radiation Physics.	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics.	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
Nov. 23-Dec. 5, 1987	VIth International Workshop on Physics of Materials.	Topics proposed to be covered are: Semiconductor Materials; Soil Energy Materials; Laser Materials; Dielectric Materials; and Superconducting Materials.	Jamia Millia Islamia, New Delhi in collaboration with Asian Physical Society, UNESCO, COSTED.	Prof. Z.H. Haide, Convener, VIth International Workshop on Physics of Materials, Department of Physics, Jamia Millia Islamia, New Delhi—110025
November 25-27, 1987	International Conference on Mud Architecture.	To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.	Ministry of Urban Development, Govt. of India, in collaboraton with the Govt. of Kerala, HUDCO and the All India Housing Development Association.	Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & & Urban Development Corporation, K.G. Road, Bangalore - 560 009.
November 26-28, 1987	International Seminar on Instrumental Methods of Electro-Analytical Techniques.	To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electroanalysis.	Indian Institute of Science, Bangalore.	Prof. M.H. Dhananjaya, Principal and Chairman of the Organising Committee, S.J. College of Engg., Mysore.
December 7-11, 1987	Seventh Triennial International Conference on Thin Films. (ICTF-7)	To take stock of recent progress in the field of science, technology and applications of their films.	Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.	Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.
December 16-18, 1987	International Symposium on Electronic Devices, Circuits and Systems.	To provide a forum to research workers all over the world for exchange of information and technical perceptions in electronic devices, circuits and systems.	Indian Institute of Technology, Kharagpur.	Prof. N. B. Chakravarti, Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur - 721302
December 18-19, 1987	National Conference on Role of Universities in Implementation of New Education Policy.	The Conference will focus on Management of Higher Education, Improvement in Efficiency and New Strategies in Higher Education vis-a-vis New Education Policy	Association of Indian Universities in collaboration with Osmania University, Hyderabad.	Dr. V. Natarajan, Project Director (Exams) Association of Indian Universities, 16, Kotla Marg, New Delhi-110002
December 28-30, 1987	Third National Conference on Surfactants, Emulsions and Biocolloids.	To provide an opportunity to technologists and experts from academic and research institutions and industries to exchange views and discuss developments related to latest findings from active research.	Aligarh Muslim University in collaboration with Indian Society for Surface Science and Technology.	Dr. H.N. Singh, Reader, Department of Chemistry, Aligarh Muslim University, Aligarh.
December 28-31, 1987	33rd All India Library Conference	To discuss various aspects of modernisation in Libraries	Bharathidasan University in collaboration with Indian Library Association	Mr. A. Sundararajan, Organising Secretary, 33rd All India Library Association, University Library, Tiruchirapalli 620023

Sweeping Powers for Medical Council

The Medical Council of India is reportedly being vested with sweeping powers to coordinate and streamline the standards of medical education at all levels.

The Indian Medical Council Amendment Bill, 1987, introduced in the Rajya Sabha in the last session makes mandatory for the Council's permission to be sought for the opening of new medical colleges, new courses, or increase in the number of seats in existing medical colleges. It also prohibits collection of capitation fee, donation or gifts and provides for punishment for contravention of these provisions.

The bill provides that the Medical Council of India shall :

- Coordinate and determine the standards of medical education at all levels ;
- Regulate the practice of medicine in India and maintain the Indian medical register ;
- Advise the Centre in matters relating to the requirements of manpower in the field of medicine ; and
- Undertake periodical review of undergraduate and postgraduate medical education.

The bill seeks to meet certain shortcomings and inadequacies in the existing Act. According to the statement of objects and reasons of the Bill, there is no uniformity in medical education and improving the quality of education, maintaining uniform standards and coordinating such standards have become all the more necessary after the inclusion of education in the Concurrent list of the seventh Schedule of the Constitution.

The bill stipulates that no medical college or person in charge of or responsible for the management shall :

(A) Accept either directly or indirectly, any donation, gift or other payment (by whatever name called) whether in cash or in kind of any amount by way of capitation fees.

(B) Receive any fee or amount in excess of the scales of fees prescribed by the Medical Council from or in relation to any student, whether Indian or foreign, in connection with the admission or transfer of such student.

Whoever contravenes the provisions of Section D shall without prejudice to the provisions of Section 10E be punishable with imprisonment for a term not less than three years but may extend to seven years and with fine up to Rs. 5,000.

Clause 12 seeks to insert new sections to regulate the establishment of new medical colleges, opening of new course of study or training and increasing the admission capacity of medical colleges in relation to any course of study.

It also seeks to impose certain restrictions with regard to admission of foreign students which shall be in accordance with the rules made by the Central Government and the reservation of seats for the scheduled castes and scheduled tribes in various courses.

It will regulate the fee with regard to different classes of medical colleges and for Indian and foreign students.

Clause 33 seeks to make a provision for saving any action taken under a state law for prosecution of persons who have committed offences under such law for the levy of collection of capitation fee or any other fee or amount in excess of the fee under such law for admission to medical colleges.

A new section provides that no court shall take cognizance of an offence punishable under the Act except on a complaint made in writing by the Medical Council of India or any officer authorised by the Council.

Another clause enables the Medical Council to make regulations with respect to age, qualifications, and minimum requirements for admission and the courses of study, period of study and practical training to be undertaken as also to conduct examinations, admissions to such examinations, prescribing forms of applications and fees for such admissions. ☐

Recent Publications

1.	Handbook of Medical Education-1987	:	Rs. 45.00
2.	Monograph on Sample Free Item Analysis	:	Rs. 50.00
3.	Bibliography of Doctoral Dissertations in Social Sciences & Humanities 1983-84	:	Rs. 180.00
4.	Educational Statistics at a Glance	:	Rs. 75.00
5.	Education and Economic Development	:	Rs. 25.00

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Ramanujan Centenary Celebrations

To commemorate the birth centenary year of the noted mathematician, Srinivasa Ramanujan, the School of Mathematics of the Madurai Kamaraj University, has arranged a series of activities to honour his memory.

Prof. D.N. Misra, Adviser (M), CSIR, inaugurated the activities on April 4, 1987. An exhibition of memorabilia of Srinivasa Ramanujan was organised on the occasion.

The following programmes have been planned as part of the year-long celebrations :

Ramanujan Centenary Lectures : Under this programme, a series of lectures by eminent mathematicians is being arranged. The aim of these lectures is to clearly explain the works of Ramanujan in the modern language so that several people especially students can understand and take up further work from the foundations which Ramanujan had laid.

The inaugural lecture was delivered on 29-4-1987 by Prof. S. Raghavan, Dean, School of Mathematics, TIFR, Bombay. The second group of lectures were delivered on 3rd and 4th August, 1987 by Prof. R. Sivaramakrishnan, University of Calicut.

Ramanujan Centenary Symposium : A research symposium connected with Ramanujan's works was held from 5-10 October, 1987. Prof. R.P. Bambah, Vice-Chancellor, Panjab University inaugurated and Prof. R.P. Agarwal, Vice-Chancellor, Rajasthan University delivered a special address. Supported by the University Grants Commission, the proceedings of the symposium are to be dedicated to the memory of Ramanujan. It is also proposed to publish these proceedings.

Ramanujan Centenary Exhibition: A collection of memorabilia of Ramanujan's life and mathematical works together with attractive charts on some famous solved and unsolved problems in mathematics are being collected to form a permanent exhibit. An initial exhibition of such materials was opened at the inauguration day on April 4, 1987. This nucleus is being expanded, and requires further support. There will be an essay competition of the postgraduate students of this University. The School also proposes to start Ramanujan Study Circle.

Diploma in Creative Writing

The Indira Gandhi National Open University has announced the launching of a Diploma Course in creative writing in English. The programme is intended to provide understanding, skill and professional knowledge about the art of writing to help develop the creative ability. The programme comprises two compulsory courses—General Principles of Writing, and a Guided Writing Project, and any three of the following elective courses, namely, Feature Writing, Short Story, Writing for Radio & Television, and Writing Poetry.

The Programme is open to anyone who is 25 and above in age as on 1 January 1988 and has a genuine aptitute for imaginative writing. The essential requirement for this programme is that a candidate should be able to demonstrate reasonable competence in the use of English language. No formal degree is required for the course. Admission will be decided on the basis of the evaluation of the answers by the candidate in the self-appraisal form attached with the application form.

Further details can be had from The Director (Admissions), Indira Gandhi National Open University, K-76, Hauz Khas, New Delhi-110016.

Purvanchal Varsity

The Uttar Pradesh Government has decided to establish the Purvanchal University. To be located at Jaunpur, the University is expected to start functioning from the next academic session. This will be the 14th university in the State.

According to State Education Minister, Mr. Syed Sibte Razi, the University will cover six districts—Azamgarh, Ghazipur, Jaunpur, Mirzapur, Ballia and Varanasi. Altogether 68 degree colleges would come under the University. At present it will work only as an examining and administrative body.

The University has been established to lessen the burden of Gorakhpur University which is now administrating a record number of 104 colleges.

A 208-hectare site has been acquired for the construction of the university buildings with the sanctioned outlay of Rs. 4 crores.

Dr. Harimurti Singh has been appointed as the first Vice-Chancellor of the University.

We Congratulate . . .

Dr. C.R. Mitra, Director, Birla Institute of Technology (BITS) and former President, AIU, who has been conferred the "Honor Summus" medal by the Watumull Foundation of the United States for his outstanding and examplary contribution to India's educational development since independence.

Research Assistance for Education Deptt.

The Post-Graduate Department of Education, of the S.N.D.T. College of Education for Women, Pune under the SNDT Women's University has been selected by the U.G.C. for the Departmental Research Assistance for a period of three years. The thrust areas are Educational Technology, Educational Psychology and Teacher Education, Technology for teaching and management. A research project on Research Aptitude has also been approved under this assistance. The Department has been granted about Rs. 9 lakhs for a period of three years under this programme.

Infrastructural Facility

A 350-tonne Hydraulic Press with steam heated plattens 60 cm x 90 cm, 3 day light has been installed and commissioned in Regional Research Laboratory, Jammu. The Press is also fitted with thermostatic control for controlling platten temperature. With this facility studies for utilization of ligno cellulosic waste available as agro industrial and forest residues will be conducted for making of different kinds of composite materials.

Already some laboratory data on *Lantana camara*, an abnoxious weed, in combination with cotton stalks and forest waste has been obtained for composite board. This Press will also be a facility for scaling up work.

Music Archives

The Music Department of the Tamil University, Thanjavur, proposes to establish an archives to preserve the ancient tradition of Tamil Isai. Music Discs, tapes, etc. of eminent artists of traditional music and rare musical instruments will be collected and preserved in this archives. All India Radio, H.M.V. Gramophone Co., Saraswathy Stores (Columbia) and other Institutions and individuals will be contacted to collect the same. Photographs and biographies of Tamil composers, musicians, and musicologists will also find a place in this archives.

Telugu Varsity Endowment

Telugu University, Hyderabad is reported to have decided to create an endowment of Rs. 2.50 lakhs in the Tamil University, Thanjavur for establishing a Department of Telugu Studies.

National Seminar on Folklore

The Department of Tamil Studies of the Madurai Kamaraj University recently organised a national seminar on Folklore. The theme of the seminar was "Folklore and modern technology". Papers based on sub-themes such as modern media and oral tradition, folklore genre in the modern world, performing folk arts and the mass media, production and dissemination of modern folklore, folklore and mass culture in India, folk medicine and its importance in the modern world were presented.

About 80 scholars from different parts of India belonging to various disciplines such as Sociology, Folklore, Anthropology, Literature, Linguistics, History, Medicine and Music participated. Dr. Saraswathi Venugopal directed the seminar.

News from Agril. Varsities

Mitigating Drought Losses

Indian Council of Agricultural Research (ICAR) is reported to have prepared a macrolevel analytical report for increasing the production of foodgrains and fodder for livestock during the rabi season to compensate for the losses suffered in the kharif due to unprecedented drought. This was announced at a meeting of Vice-Chancellors of all the 26 agricultural universities of India, specially convened by ICAR in New Delhi recently to discuss the key issues.

The issues discussed at the meeting related to (1) how to compensate for the losses suffered in the kharif season as a result of the drought and floods through increased production in the early rabi and the late rabi seasons, (2) development of short-term and the long-term plans for developing technologies that are drought-proof and/or less influenced by the vagaries of weather in future: and (3) undertaking studies for future guidance on the short-term and long-term effects of drought on farmers, farm-labours and livestock.

According to ICAR sources, the agricultural universities were stepping up the seed production of cereals, oilseeds, pulses and also of fodders and horticultural crops. The universities would also train specialists of departments of agriculture of various State Governments and take up the work of speedily transferring the newly evolved technologies by involving the scientists, teachers and students at village level. Work of identifying the drought tolerant and drought escaping varieties of crops could be further intensified.

The Vice-Chancellors' meeting

recommedded that NREP, FLEGP and other such schemes, aimed at the improvement of rural areas and people, should dove-toil their activities to create permanent assets like desilting, repairing and digging of tanks and wells for augmenting water resources for life saving, irrigation and reclamation of saline and alkaline areas.

The meeting was of the view that since India had been experiencing drought through centuries in one part or the other, there should be a long-term strategy for minimising the ill-effects of such weather aberrations by appropriate watershed management and afforestation. Since water is the most crucial input for any living organism, whether plant or animal, it is felt that the water that is lost into the sea each year through major river systems should be diverted through appropriate links between different river systems. For this, the Himalayan catchment area should also be so managed that the flow of water into plains is regulated, minimising the impact of twin-problems of floods and drought. Unless the immense water resources were properly exploited and wastage through run-off stopped, future agriculture would continue to be subjected to the vagaries of weather inflicting sufferings on human and animal wealth of the country.

Another recommendation made at the meeting was that the agro-forestry, silvi-pastoral and silvi-horticultural systems should be popularised in the countryside to meet the fuel and fodder requirements. Paddy straw and sugarcane bagasse surpluses are available in high production on states, which need to be linked up with areas of permanent fodder deficit areas for creating fodder banks. Paddy straw and sugarcane bagasse, after treating with urea, make a nutritious fodder for livestock.

Biological Control of Pests

The Centre for Plant Protection Studies and the Directorate of Extension Education of the Tamil Nadu Agricultural University, Coimbatore conducted a workshop on "Biological Control of Pests and Plant Pathogens of Crops". The objective of the workshop was to impart knowledge on the latest technology in mass production of beneficial organisms and their field use in the management of crop pests besides the newer concept of use of antogonistic organisms in controlling fungal diseases.

Over 20 Agricultural Officers of the State Departments of Agriculture and Oil-seeds attended the workshop. Padmasri Dr. J.S.P. Yadav, Research and Educational Adviser of the USAID Programme, New Delhi and formerly Vice-Chancellor, Haryana Agricultural University and Chairman, Agricultural Scientists Recruitment Board, ICAR, distributed the newer biocontrol agents and certificates to the Officers.

Workshop on Rabi Crops

Shri Mahender Singh Rathi, IAS, Vice-Chancellor, Haryana Agricultural University, recently inaugurated a two-day Agricultural Officers' Workshop on Rabi Crops. Mr. Rathi asked the scientists to concentrate their research activities on evolution of crop varieties suitable for rain-fed and restricted irrigation tracts. He said that the production potential in oil-seeds, pulses and sugarcane has not been fully realised as yet. Laying stress on diversification in agriculture, he made a plea for development of new technology in the fields of horticulture, forestry, apiculture and poultry, etc. Improved farm implements suited to dry-land agriculture, he said, were very much needed. He opined that water and soil moisture needed to be utilised most judiciously and effectively since the situation regarding availability of water was not likely to improve in the near future.

About 300 agricultural officers, farm functionaries, scientists and some representatives of private firms attended the workshop in which strategies for the rabi crops were decided and a package of practices evolved for the coming season.

News from Abroad

Foreign Students in USSR

According to Artur Belov, Deputy Minister of Higher and Specialised Secondary Education of the USSR, more thrn 250,000 foreigners have graduated from Soviet colleges. Over one-third of them (90,000) are from developing countries. Nearly 20,000 foreign postgraduate students have defended their theses in the Soviet Union and become Ph.Ds.

Today, 110,000 foreigners from 149 countries, mostly developing nations, are being trained at more than 500 educational establishments and research institutes of the USSR Academy of Sciences. The majority of graduates are engineers, doctors, teachers, agronomists, veterinaries, physicists, mathematicians and lawyers. The Soviet Union views this work as part of its foreign policy activities and a contribution to solving global problems, including development of public health, education, transport, power engineering and agriculture.

Foreigners are taught according to the same curricula as Soviet students. They have special subjects and courses (over 150) which take into consideration specific natural, climatic and other conditions in their respective countries, for example, a course in tropical and subtropical farming, tropical medicine, designing and industrial and housing construction in mountain regions, hot and dry climate and high seismicity. Such courses consist of lectures and laboratory work and form part of the curricula.

There are different ways of teaching at various colleges and faculties. Chemistry, biology, geology, physics, mathematics and other similar subjects take up an average of 70 per cent of the instruction hours at natural science faculties. The remaining hours are spent on humanities. In engineering colleges some 50 per cent of the hours go on engineering subjects, 30 to 40 per cent on special courses and practical training and 10 to 20 per cent on socio-economic and other subjects.

Education of foreigners at Soviet colleges, including the preparatory departments for those who cannot speak Russian, is free. Moreover foreign students, postgraduates and trainees receive stipends from 80 to 200 roubles a month. Those who arrive from hot countries receive warm clothing worth up to 300 roubles. In summer they are offered discount vouchers to health resorts or tourist inns. Like all Soviet citizens, they have a right to free medical assistance.

Education & Society in Japan

International Internship Programs (IIP) is offeriug to educators an opportunity to observe Japan's educational system. From January 6 to January 27, 1988, educators may participate in a special seminar titled "Education and Society In Japan" to be held in Tokyo, Japan. The participants to the seminar will study different educational methodologies and the system and philosophy of Japanese education. Studies and lectures will be complemented with visits to and observation of local schools and educational institutions. This overseas project provides a unique opportunity for interaction with Japanese educators.

Those interested to register for IIP's Study Abroad Projects may contact, for further information, International Intership Programs, 406 Colman Building, 811 1st Avenue, Seattle, Washington 98104 or call (106) 623-5539.

Sports News

Freedom Forty Matches

As part of the celebrations of the 40th anniversary of our independence, Hockey and Football matches are being organised at Delhi and Calcutta respectively between Ex-International XI and Indian Universities XI. The underlying idea in arranging these fixtures is to symbolise the transfer of expertise from the older generation to the present generation.

Ex-International is likely to comprise former players who have donned National colours in International competitions like Olympics, Asian Games, etc. It will be a unique experience for the young university players to match their prowess with the veterans.

Freedom Forty Matches, as these will be popularly known, are being organised and conducted by the Sports Authority of India. AIU will select and train the Indian Universities Teams. The Teams will be selected on the basis of performance of players in the respective Inter-University Tournaments. The matches will be played as per details below :

Football—Calcutta, December 5, 1987.

Hockey—New Delhi, January 25, 1988.

ASSOCIATION OF INDIAN UNIVERSITIES

NOTIFICATION

It has come to the notice of the Association of Indian Universities that several advertisements have appeared in the newspapers in the name of NEWPORT UNIVERSITY, CALIFORNIA, USA for MBA, BBA and other degree courses to be conducted by some private institutions in India. All concerned are informed through this announcement that the so called Newport University, California, USA, is NOT an **accredited institution** in USA; the question of its recognition in India, therefore, does not arise. The notification is issued in the interest of all those who have been attracted by the claims about the aforesaid Institution as advertised in the newspapers.

Students, Teachers, University administrators and others are welcome to seek information on the status of any university from Deputy Secretary (Evaluation), Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002.

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is open from 9-00 a.m. to 5-30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

ADDITIONS TO AIU LIBRARY

Aditi : The living arts of India. Washington, Smithsonian Institution Press, 1986. 280P.

Anand, R.L. *Playing field manual.* Patiala, Netaji Subhas National Institute of Sports, 1971. 119p.

Ansari, M.M. *Education and economic development.* Delhi, A.I.U. (c 1987) xi, 57p.

Brijbhushan, Jamila. *World of Indian Miniatures.* Tokyo, Kodansha International (c1979) 205p.

Camp, Richaurd R and others. *Toward a more organizationally effective training strategy and practice.* New Jersey, Prentice-Hall (c1986) x, 405p.

Curtice, Robert M. *Strategic value analysis : A modern approach to systems and data planning.* New Jersey, Prentice-Hall (c1987) xi, 113p.

Davies, Don. *Maximizing examination performance : A psychological approach.* London, Kogan Page (c1986) 146p.

Debi, Renu. *Progress of education in Assam.* Guhati Omsons Publications, 1987. vi, 238p.

Dennison, Bill and Shenton, Ken. *Challenges in educational management : Principles into practice.* London, Croom Helm (c1987) 213p.

Devi Prasad. *Peace education or education for peace : A thesis.* Delhi, Peace Foundation (c 1984) 148p.

Gardner, Johan W. *Excellence : Can we be equal and excellent too ?* Rev ed. Bombay, Vakils, Feffer Simons (c 1984) 175p.

Goa, Delhi, Vikas (c1984) 120p.

Goyal, M.R. and Gupta, Mahesh C. *Anatomy of medical education.* New Delhi, Central Subscription Agency, 1986. x, 306p.

Gupta, B. M. and others, ed. *Handook of libraries, archives and information centres in India. 5V. (V.4.) Asia-Pacific Cooperative information systems, networks and programmes.* (3V Already received). Delhi, Information Industry Publications, (c 1986) xiii, 232p.

Jayaram, N. *Higher education and status retention: Students in a metropolis.* Delhi, Mittal, 1987. xviii, 193p.

Jenks, James M and Kelly, John M. *Don't do delegate ! : The secret power of successful managers.* London, Kogan Page (c1985) 174p.

Journey through India. Delhi, Lustre Press (c 1986) 96p.

Keller, Robert. *Expert system technology : Development and application.* New Jersey, Yourdon Press (c1987) xxii, 246p.

Kulkarni, S.S. *Introduction to educational technology : A systems approach to micro level education.* New Delhi, Oxford & IBH (c1986) x, 479p.

Kundu, Chunilal. *Personality development : A critique of Indian studies.* Kurukshetra, Vishal, 1977, xvi, 288p.

Mridula. *Educational statistics at a glance.* Delhi, A.I.U (c1987) xxiv, 193p.

Mukherjee, Pranab. *Beyond survival : Emerging dimensions of Indian economy.* Sahibabad, Vikas (c1984) vii, 264p.

Owens, Robert, G. *Organizational behaviour in education.* New Jersey, Prentice-Hall (c1970) xxx, 332p.

Raghavan, G.N.S. *Introducing India.* New Delhi, Indian, Council for Cultural Relations, 1983, 130p.

Schauer, Bruce P. *Economics of managing library service.* Chicago, American Library Association (c1986) xii, 278p.

Sharma, G.D. and Ahmed, Shakti R., ed. *Methodologies of teaching in colleges.* Delhi, NIEPA (c1986) ix, 217p.

Van Alstyne, Judith S. *Professional and technical writing strategies.* New Jersey, Prentice-Hall (c1986) x, 433p.

Vasudev. *Doctrine of Ahimsa.* Delhi. Wasudhir Foundaion. 243p.

Veeraraghavan, Vimla. *Rape and victims of rape.* Delhi, Northern Book Centre, 1987. x,126p.

Wakhlu, D.N. and Labru, G.L., ed. *Leadership in technical education institutions.* Srinagar, Regional Engineering College, 1982. ix,180 p.

Yadav, S.K. *Non-formal education : A new policy perspective.* Delhi, Shree Publishing House, 1987. vi, 152p.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Rath Bhikari Charan. *Strawson's Philosophy of language.* Utkal.

2. Sarkar, Sunil Kumar. *A critique of phenomenology.* NBU.

3. Sharma, Meenakshi N. *A comparative study of the influence of moral values on parent child relationship in the age group of 9-16 in Northern India and in the State of California.* Durgawati.

Fine Arts

Drawing and Painting

1. Chaturvedi, Mamta. *Jaipur shaili ke bhitti chitra.* Rajasthan. Dr. J.S. Mehta.

Music

1. Nigam, Sarita. *Hindustani sangeet mein raag vargikaran: Ek adhyayan.* Delhi.

Language & Literature

English

1. Chellammal, E. *Southernness in the novels of Carson McCullers.* Anna.

2. Dharker, Deval Chandrakant. *Madness, violence and comic cruelty in recent American fiction.* Baroda.

3. Grover, Malta. *Bhabani Bhattacharya as novelist of social conscience.* Roorkee.

4. Sarma, Karri Godavari. *Trends in post-independence Indo-Anglian poetry.* Andhra.

Sanskrit

1. Arya, Vijaypal. *Kasikagatalaksyavisesanam : Arthah prayogasca.* Delhi.

2. Belsare, P.H. *Sarasvatikanthabharana : A study.* Osmania.

3. Gayen, Jyotsna. *Some aspects of the earliest physical features and natural and political divisions of India as known from the Ancient Indian texts.* Calcutta.

4. Gogoi, Pradip Kumar. *The origin and development of the Harichandra Legend.* Gauhati. Dr. Ashok Kumar Goswami.

5. Gupta, Shashi. *Vidyaranya krita vivarana prameya samgraha antargata adhyasa prakarana : Ek adhyayan.* Delhi.

6. Lakshmi Kutti, P.A. *Bhasa and his plays.* Bangalore. Dr. K. Rajagopalachar.

7. Pant, Deepa. *Sanskrit kalashastra ke paripreksha mein Shri Harsh kee natya kritiyon ka vivechanatmak adhyayan.* Rajasthan. Dr. G.D. Bhatt.

8. Pathak, Jiban Chandra. *The Krishna Cult in Assam : A study in its antiquity, literature and philosophy.* Gauhati. Dr. B.N. Hazarika.

9. Satya Surayanarayana Murthy, Kandukuri. *Sri Peri Suryanarayana Sastri varivasya.* Andhra.

10. Sharma, Surender Kumar. *Siddhasidhanta Paddhati . Eka adhyayana.* Delhi.

11. Venkata Satyanarayana Murty, Emani. *The treatment of minor areas in Ancient Sanskrit plays.* Andhra.

Punjabi

1. Krishna Kumari. *Guru Ravidas Jee da bhakti marg.* Panjab.

2. Pritam Kaur. *Dalip Kaur Tiwana da Galap Jagat.* Delhi.

Hindi

1. Chawla, Jyoti. *Charitropakhyan : Sahityik tatha sanskritik adhyayana.* Delhi.

2. Dholala, D. *Premchand aur shoshit varg : Kahaniyon ke sandarbh mein.* Gulbraga. Dr. S.M. Kappikeri.

3. Gupta, Meenakshi. *Natya bhasha aur Bharatendu Harishchandra.* Delhi.

4. Gupta, Shashi Bala. *Yashpal ka kahani sahitya : Chintan aur shilp.* Kurukshetra.

5. Marawar, Vasundhara. *Hindi kee mahila upanyaskaron ke nari ke chitran ka anusheelan.* Nagpur. Dr. Indrapal Singh.

6. Mishra, Umesh. *Hindi mein nayak-nayika bhed aur uski kalatmak uplabdhiyan.* Rajasthan. Dr. V.N. Upadhyay.

7. Mohbansi, Rajrani. *Hindi ekankiyon mein nari chitran.* Nagpur. Dr. Ghanshyam Vyas.

8. Prabhu, Nirmala. *Sri Sumitra Nandan Pant ke kavyon mein parilakshit adhunik vichardharayen.* Bangalore. Dr. (Mrs) Kanti Singh.

9. Pramila, Somuri. *Personality of Dinkar.* Andhra.

10. Puri, Kusum. *Samkaleen Hindi upanyas mein mahanagariya bodh.* Panjab.

11. Shashi Prabha. *Sathottari Hindi upanyas : Mulya chetna.* Delhi.

12. Shri Prakash. *Punarjagaran aur Hindi kavita, 1850-1920.* Delhi.

13. Singh, Rajkumari. *Hindi aur Angrezi ke anchalik upanyason ka tulnatmak adhyayan.* Osmania.

14. Vyas, Minakshi, *Sarveshwar ke kavya ka shailivaigyanik adhyayan.* Delhi.

15. Vyas, N.N. *Swatantrayottar Hindi natya sahitya aur rashtriyata.* Saurashtra. Dr. G.D. Agrawal.

16. Wasdev, Harbans Lal. *Yugbodh ke sandarbh mein Tolstoy aur Premchand ka upanyas sahitya.* Panjab.

Urdu

1. Khurshid Anwar. *Sense of history in Qutub Ain Hyder's novels.* JNU. Dr. Aslam Parvaz.

2. Yasmin Khanum. *The contribution of the Department of Urdu, Osmania University to Urdu language and literature.* Osmania.

Bengali

1. Gayen, Ramapada. *Bangla Upanyasur kalakritik bibartan.* Calcutta.

2. Goswami, Asokananda. *Dinabandhu Daser Sri Sri Sankirtanamrita.* Calcutta.

Oriya

1. Dalai, Patitapaban. *Social awareness through short stories of Pandit Godawarish Mishra.* Utkal

2. Mohanty, Srikanta. *A study on the imagery in modern Oriya poerty in the light of philosophy of language.* Utkal.

3. Pradhan, Pravakar. *Socialist realism and Poet Anant Pattanayak.* Utkal.

4. Sarangi, Sarat Kumar. *Odia Krushna Kavya o Kabi Dinakrushna.* Sambalpur. Dr. G.C. Mishra.

Arabic

1. Sadia, Haleema. *Arab wa Hind ke talluqat.* Nagpur. Prof. S.A. Rahim.

2. Syed Bashir Ahmad. *A critical study of Sayyed Qutb as a modern writer in the light of his works and literary achievements.* CIEFL.

Kannada

1. Priyadarshini, Mangala. *Navodaya kavyadalli anubhavada Amshagalu-Ondu adhyayana.* Bangalore. Dr. G.S. Shivarudrappa.

2. Shetty, N. Damodara. *Muddanana shabdesrishti matt prayoga.* Mangalore. Dr. Srinivasa Havanour.

Telugu

1. Padmini Devi, B. T. *Telugule Panchatantra Kavyamulu* Osmania.

2. Venkatacharyulu, Kotto. *Kallakuri Narayan Rao Rachanalu.* Osmania.

Thai

1. Muangnil, Samnieng. *Some topics in generative phonology of Thai.* Delhi.

Geography

1. Sinha, Braj Raj Kumar. *Human resources utilization in Dhanarua Block of Patna District, Bihar.* Baroda.

History

1. Amiya Devi. *Assam under King Rudra Sinha : A critical study.* Gauhati. Dr. N.N. Acharyya.

2. Chakrabarti, Gayatri. *Espionage in Ancient India.* Calcutta.

3. Dasgupta, Atiskumar. *The Fakir and Sannyasi uprisings.* Calcutta.

4. Deka, Dinesh Chandra. *The Bodos of Kamrup : A sociological study.* Gauhati. Dr. N. Hazarika.

5. Kaushik, Shobha. *Railways in Rajasthan : A study in historical perspective, 1982-1951.* Rajasthan. Dr. U.C Chaturvedi.

6. Krishnan, K. *Chemical and petrological studies in Ancient Indian pottery.* Baroda.

7. Panwar, Madanlal. *Mahamana Pt. Madan Mohan Malviya ka vyaktitva evam krititva.* Vikram. Dr. B.G. Sharma.

8. Rahman, Mohammad Abdul. *A critical analysis of the Nizam's Government's policies regarding social and political problems in the State, 1935-48.* Osmania.

9. Rathaur, Mohan Singh. *Nineteenth century CIS-Sutlej Hill States : Economy and society.* HP.

Shortly Releasing

1. New Technologies in Higher Education
2. Studies in Distance Education

Address Enquiries to :

Under Secretary (Publications)
ASSOCIATION OF INDIAN UNIVERSITIES
AIU House, 16 Kotla Marg,
New Delhi-110002

Telephones : 3310059; 3312305; 3312429 and 3313390
Telex : 31 5578 AIU IN *Gram* : ASINDU

CLASSIFIED ADVERTISEMENTS

MOTHER TERESA WOMEN'S UNIVERSITY

KODAIKANAL 624 102

Notification No. 36

Applications in the prescribed form are invited from lady candidates for the following posts :—

	Post	No. of Vacancies
1. Women's Studies pertaining to Economics	Professor	One
	Reader	One
	Lecturer	One
2. Women's Studies pertaining to Education	Reader	One
3. Women's Studies pertaining to English	Reader	One
	Lecturer	One
4. Women's Studies pertaining to Family Life Management	Professor	One
	Reader	One
	Lecturer	Two
5. Women's Studies pertaining to Historical Studies.	Reader	One
6. Women's Studies pertaining to Sociology	Professor	One
	Reader	One
7. Women's Studies pertaining to Psychology	Professor	One
	Reader	One
	Lecturer	Two
8. Coordinator for Extension Work		One
9. Coordinator for Research Projects		One

Essential qualifications for the posts are :

Professorship

An eminent scholar with a doctorate degree and published work of high quality, actively engaged in research, 10 years experience of teaching and/or research, experience of guiding research at doctoral level and evidence of being actively engaged in Women's Studies.

Readership

Good academic record with atleast high second class Master's degree in a relevant subject with a doctoral degree or equivalent published work. Evidence of being actively engaged in women's studies, 5 years experience of teaching in under-graduate/post-graduate classes and/or post-doctoral research work with evidence of published work.

Lecturership

(a) A doctorate degree or research work of an equally high standard.

(b) Good academic record with atleast high second class Master's degree in a relevant subject from an indian university or an equivalent degree from a foreign university.

Having regard to the need for developing inter-disciplinary programmes, the degree in (a) and (b) may be in relevant subjects.

Provided further that if a candidate possessing a Doctor's degree, or equivalent research work is not available or is not considered suitable, a person possessing good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed on the condition that she will have to obtain a Doctor's degree or give evidence of research of high standard within 3 years of her appointment failing which she will not be able to earn future increments until she fulfils these requirements.

Coordinator for Extension Work

A good scholar with rich experience of not less than 5 years in coordinating extension work with teaching/research.

Coordinator for Research Projects

Eminent scholar with a doctorate degree and published work of high quality, actively engaged in research and about 10 years of experience in guiding research and conducting research studies.

Scale of pay for the posts are

Professor	—Rs. 1500-60-1800-100-2000-125/2-2500.
Reader	—Rs. 1200-50-1300-60-1900.
Lecturer	—Rs. 700-40-1100-50-1600.
Coordinator for Extension work	—Rs. 1200-50-1300-60-1900.
Coordinator for Research Projects	– Rs. 1500-60-1800-100-2000-125-2500.

Note: 1. Appointment of persons on deputation will also be considered, if the candidates are found suitable and the employer is agreeable to spare the services.

2. The University reserves the right to shortlist the candidates.

3. The Selection Committee reserves the right to relax the qualification and experience in exceptional cases.

Application forms can be had from the Registrar-in-charge, Mother Teresa Women's University, Kodaikanal 624 102 on requisition accompanied by a postal order for Rs. 15/- drawn in favour of Registrar-in-charge and a self addressed Rs. 1.40 paise stamped envelope (35 cm x 10 cm).

The last date for the receipt of filled in applications is 6th November, 1987.

Dr. V.P. Devadatta
Registrar-in-Charge

GURU NANAK DEV UNIVERSITY
AMRITSAR
Advertisement No. 7/87

Applications are invited for the following posts on prescribed form obtainable at a price of Rs. 2/- from the office of the Registrar by making written request accompanied by self-addressed Rs. 1-40 stamped envelope of 33 x 10 cms so as to reach this office by **14-11-1987** alongwith crossed Indian Postal Order(s) of Rs. 10/- for the posts at Sr. No. 1 to 7 and Rs. 5/- for other posts (non-refundable) drawn in favour of the Registrar, Guru Nanak Dev University, Amritsar.

Persons already in employment must send their applications through their employer. Candidates from within India may not be considered in absentia. Higher start in the grade may be given depending upon qualifications and experience.

The qualifications for the posts of Readers and Lecturers are as prescribed by the University Grants Commission :

Readers (Grade Rs. 1200-50-1300-60-1900)

1. Electronics Technology-2
2. Physics-1
3. Physical Education (Teaching)

Lecturers : (Grade Rs. 700-40-1100-50-1600)

4. Physics (Job Oriented Course)-2
5. Sociology-2
6. Assistant Director Physical Education (Campus)-1 (Grade Rs. 700-1600)

7-(i) Research Fellow (Chemistry Deptt.)-2 Rs. 800/- p.m. (fixed)
(ii) Research Fellow-cum-Demonstrator-2 (Chemistry Department) Rs. 800/- p.m. (fixed) +Rs. 100/- demonstration allowance.

8. Technician Grade-II (Physics)-1 (Grade Rs. 480-880)
9. Field Supervisor (Youth Welfare Deptt.) (Grade Rs. 400-600)-1
10. Electrician Grade-II (Constn. Wing) (Grade Rs. 400-600)-1
11. Technician Grade-C (USIC)-1 (Grade Rs. 380-560)
12. Cook (For Guest House & Faculty House)-2 (Grade Rs. 400-600)

QUALIFICATIONS SPECIALISATIONS

Sr. No. 1. **Essential**

(i) Ph.D. Degree in Electronics and Communication Engg./Electrical Engg. with minimum experience of 3 years in teaching and/or research in a University and/or Institute of repute.

OR

First class Master's Degree in Electronics and Communication Engg./Electrical Engg. with minimum 5 years experience in teaching and/or research in a University and/or Institute of repute.

(ii) Specialised knowledge in Instrumentations/Computer Technology/Communication Engg./Control Systems.

Sr. No. 2. (i) Solid State Physics.
(ii) Theoretical Physics.
(iii) Radiation Physics.

Sr. No. 3. **(A) Specialisation**

Specialisation in Physiology of Exercise (Exercise Physiology)/Sports Medicine/Sports Psychology/Sports Sociology / Sports Kinanthropometry/ Research Methodology in Physical Education and Sports.

(B) Preferable

1. Guiding research work for M.P. Ed./M. Phil/Ph.D./ students in Physical Education.

2. Teaching experience in a University Teaching department/College of Physical Education for at least 8 years.

3. Publication of a "Text Book"/ Research articles in reputed National or International Journals.

4. Achievements in Sports/Games at the all India Inter University and above levels.

5. Administrative experience as Chairman/Head of Department of Physical Education in a University/ Principal of a College of Physical Education/College.

Sr. No. 4. Post (1) **Essential**

M.Sc./M.Tech in Applied/Exploration Geophysics.

Desirable : Some Teaching/Research/ Field experience.

Post (2) **Essential**

M.Sc. Physics/Applied Physics/Geology/Chemistry preferably followed by Ph.D. with specialisation in Nuclear/ Exploration Geophysics.

Note : For post No. 1 if a person with M.Tech. degree in Applied/ Exploration Geophysics is not available, the post will be filled with qualifications as prescribed for post No. 2.

Sr. No. 5. Specialisation in Industrial Sociology or Social Statistics.

Sr. No. 6. (i) A Master's degree in Physical Education (High Second Class) with diploma in Sports coaching from a recognised Institution.

OR

A Master's degree in Physical Education (High Second Class) with a record of having represented his University at the Inter University level/State in the National Championship.

(ii) Experience in organising games and sports (as exemplified in handling of about a dozen teams in a year in his Institution and their participation in University/Inter Collegiate tournaments) and ability to encourage mass participation in games and sports.

(iii) Preferably having teaching experience of post-graduate classes.

Sr. No. 7. (i & ii) M.Sc. IInd Class in any branch of Chemistry, preferably with some teaching/research experience.

Sr. No. 8. (i) At least IInd Class Matric with Science.

(ii) Three years experience in the Physics Laboratory of a College/University.

Sr. No. 9. (i) Minimum academic qualification B.A.

(ii) Two years experience in Youth Leadership Training Camp/Hiking and Trekking Camp.

(iii) Must have achievements in Cultural Competitions.

Sr. No. 10. **Essential**

(i) Matric

(ii) Certificate in Electrician Trade from I.T.I.

Desirable

2 years working experience in some organisation of repute.

Sr. No. 11. Diploma in Electronics with some experience or Certificate course from I.T.I. in Electronics with five years experience of repair, maintenance and handling of the electronic Instruments.

Sr. No. 12. (i) Candidate should be able to read & write and maintain day to day accounts.

(ii) Candidates should be conversant with preparation of Indian dishes as well as continental dishes.

(iii) Age should not be more than 45 years.

(iv) Shall have to stay in the guest house as a single man.

The candidates belonging to Scheduled Castes/Backward Classes of Punjab State when called for interview will be paid travelling allowance according to University rules.

REGISTRAR

NATIONAL CHEMICAL LABORATORY
PUNE—411 008
(Council of Scientific & Industrial Research)

Advertisement No. 7/87

Applications in PRESCRIBED FORM are invited for the following posts in various divisions of this laboratory. Separate application is required to be submitted for each post even if the posts applied for are from the same category/with same qualifications.

(I) Chemical Engineering Division
Scientist 'C'—5 Posts

Post 1 (Code No. 119)

Candidate should be a first class M. Sc. (Chemistry)/B. Tech. with atleast six years experience Or M. Tech./M.E. in chemical engineering with four years experience Or a Ph. D. (chemistry or chemical engineering) with atleast two years experience in catalysis, preferably in applied hemogeneous catalysis. The selected candidate will join the homogeneous catalysis group of NCL, which is presently engaged in developmental work involving new routes of industrial chemicals.

Post 2 (Code No. 120)

Candidate should be M. Tech. in Polymer technology/engineering with four years experience Or Ph. D. in chemical engineering or polymer technology with atleast two years experience in the area of rheology and processing. Candidates with practical experience of polymer processing and/or modelling of processing will be given preference. The selected candidate will join the polymer science and engineering group of NCL, which is presently engaged in developmental work in engineering polymers and polymeric alloys and other high performance featuristic polymeric materials.

Posts 3 & 4 (Code No. 121)

Candidate should be first class M.Sc. (biochemistry or microbiology)/B. Tech. with atleast six years experience or M. Tech/M.E. in biochemical engineering with four years experience or a Ph.D. in chemistry or biochemical engineering with atleast two years experience in work related to biotechnology. The selected candidate will join the bioscience and engineering group of NCL, which is presently engaged in work related to enzyme engineering and fermentation technology.

Post 5 (Code No. 122)

Candidate should be 1st class B. Tech. in electrical or chemical engineering with atleast six years experience Or M. Tech. in chemical engineering with atleast four years experience Or Ph.D. (Science) with two years experience in computer software development and process control. Knowledge of dynamic simulation will be considered as an added qualification. The selected candidate will be expected to undertake a wide ranging tasks related to development of software packages (both scientific and non-scientific) for the use of the laboratory.

Scientist 'B'—3 posts

Post 1 & 2 (Code No. 123) (one post reserved for SC community)

Candidate should be a first class B. Tech. (Biochemical engineering) or M. Tech. (Biochemical engineering) Or a Ph.D. in chemistry or biochemical engineering. The selected candidate will join the bioscience and engineering group of NCL, which is presently engaged in work related to enzyme engineering and fermentation technology.

Post 3 (Code No. 124)

Candidate should have a first class degree in chemical engineering/chemical technology/polymer technology or M. Tech. degree in chemical engineering/chemical technology/polymer technology Or Ph.D. (Science). Background experience on structure property relationships in polymers will be an advantage. The selected candidate will join the polymer science and engineering group of the laboratory, which is engaged in R & D work on industrial polymers.

(II) Process Development Division

Scientist 'B'—2 Posts (Code No. 125) (one post reserved for ST community)

Candidate should have a first class bachelor's degree in chemical engineering or M. Tech. chemical engineering Or Ph.D. (Science). Two years experience in an industrial or research organisation in the above areas is desirable.

Job requirement : The incumbent will have to undertake process development work on laboratory scale and pilot plant and collect data for scale up in the fields of drugs, organic intermediates and petrochemicals.

(III) Physical Chemistry Division

Scientist 'C'—1 Post (Code No. 126) Ph.D. in theoretical chemistry with two years of research experience supported by good published work in theoretical quantum chemistry as applied to molecular systems. **Job requirement :** The candidate will have to establish and lead a group of theoretical quantum chemistry.

(IV) Laboratory Services Section

Head Laboratory Supervisor : 1 POST (Code No. 127)

Candidate must be graduate in science or possess a 3 year Deploma in engineering with experience of working in a supervisory capacity for atleast 3 to 5 years in govt. semi-govt. or autonomous scientific organisation. **Job requirements :** The incumbent will be incharge of workers of Group C and Group D non-gazetted category in different sections who has to perform duties pertaining to (i) public address system (ii) operation of 16 mm and slide projectors, (iii) maintenance of petrol gas plants and oil gas plants, fixtures, fittings of several types, for which he will be personally responsible; and (iv) other supervisory or coordinating work entrusted to the incumbent who must possess qualities of a group leader.

(V) Class Blowing Section

Senior Technical Assistant—1 post (Code No. 128)

Candidate should have passed atleast matriculation/SSC or equivalent examination. A diploma or certificate course in glass blowing is desirable. **Experience :** Atleast 10 years experience in the fabrication of bench blown glass apparatus including silicaware and high vacuum systems required in chemical laboratories.

Scale of Pay attached to Post and Monthly Total Emoluments at the minimum of the Scale

Scientist C : Rs. 3000-100-3500-125-4500 (Rs. 3940/- p.m.)
Scientist B : Rs. 2200-75-2500-EB-100-4000 (Rs. 2926/- p.m.)
HLS/STA : Rs. 1640-60-2600-EB-75-2900 (Rs. 2296/- p.m.)

These posts carry usual allowances as admissible under the Central Government rules as applicable to the CSIR. Higher initial pay may be given on merit.

Reservation in Favour of SC/ST

(I) In the event of non-availability of suitable SC/ST candidates for the posts of Scientist B, which are reserved in favour of SC/ST, these posts will be treated as dereserved and general candidates will also be considered for these reserved posts.

(II) A lower standard of suitability in qualifications consistent with the efficiency of administration will be applied.

(III) A certificate issued by the competent authority in support of the claim as belonging to SC/ST community must be enclosed with the application.

General Conditions

1. Relaxation in experience—Minimum years of experience specified for the post of Scientist 'C' is relaxable only in exceptional cases.

2. Applications from the candidates working in Government departments, public sector organisations and Government funded research agencies will be considered only if forwarded through proper channel and with a clear certificate that the applicant will be relieved within one month of receipt of the appointment order.

3. Candidates appointed to the post with engineering qualifications shall, if so required, be liable to serve in any defence service or post connected with the Defence of India for a period spent on training if any, provided that such persons (i) shall not be required to serve as aforesaid after the expiry of 10 years from the date of appointment, and (ii) shall not ordinarily be required to serve as aforesaid after attaining the age of 40 years.

4. Mere fulfilling the minimum prescribed qualifications and experience will not vest any right in a candidate for being called for interview. The laboratory reserves the right to call for interview only those candidates who in its opinion are likely to be suitable and will not entertain any correspondence in respect of other applications.

5. The number of vacancies indicated above are vacancies existing at present. However, if any more vacancies are likely to arise before the time of actual selection, for which the qualifications, experience and job requirements are the same as notified in the advertisement, they may also be considered for filling up.

6. **Prescribed Application Forms** are obtainable from the Administrative Officer, National Chemical Laboratory, Pune—411 008, on or before **30th October 1987.** Request for forms should be accompanied with a self-addressed envelope of size 23 x 10 cm. bearing 50 paise postage stamp. Applications complete in all respects together with a crossed Indian Postal Order for Rs. 8/- (candidates belonging to SC/ST communities are exempted from payment of application fee), payable to the Director, National Chemical Laboratory, Pune 411 008, should reach the Administrative Officer, National Chemical Laboratory, Pune—411 008, not later than **13th November, 1987.**

7. Travelling allowance as per rules will be paid to the candidates called for interview.

8. Canvassing in any form and/or bringing in any influence political or otherwise, will be treated as a disqualification for the post.

9. No interim enquiries will be entertained.

10. Candidates found suitable for the post of STA (Glass Blowing) will have to appear for trade test in Glass Blowing.

PANJAB UNIVERSITY
CHANDIGARH

(Advertisement No. 10/87)

Applications are invited for the post of Professor at VVBIS & IS, Hoshiarpur in the grade of Rs. 1500-60-1800-100-2000-125/2-2500, so as to reach the Registrar, Panjab University, Chandigarh, along with postal order for Rs. 10/- by **6.11.1987.** Fourteen days extra time is permissible to the persons who have to submit their applications from abroad.

Qualifications

Essential

An eminent scholar with published work of high quality actively engaged in research. About ten years' experience of teaching and/or research. Experience of guiding research at doctoral level, or published research work of high standard in journals of repute in the fields of Lexicography/Vedic Concordance/Vedic studies. OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Desirable

Good knowledge of Nirukta and Vedic/Paninian Grammar (Vyakarna). Working knowledge of Avestan, German and French Languages.

The duties of the Professor will include providing leadership for the Project: 'A Comparative and Critical Dictionary of Vedic Interpretation and compilation of Vedic Concordance' undertaken by the Institute.

Note: 1. The Vice-Chancellor could place before the Selection Committee names of suitable persons for its consideration along with the applications received in response to the advertisement.

2. It is not obligatory on the part of the University to call for interview every candidate who possesses the essential qualifications.

3. The Syndicate may relax any of the qualifications on the recommendation of the Selection Committee in case of a suitable candidate.

Candidates who do not possess a doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their published work. The candidate has the option to fill this form in all respects on both sides and to attach 9 photostat copies thereof. The candidates are also required to attach ten copies of the list of their research publications with their 'Summary Biodata'.

Persons already in service must route their applications through proper channel. They may, however, send an advance copy of their application on the prescribed proforma, direct to the University. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Incomplete forms will not be considered. Forms received after due date are liable to be rejected unless the Vice-Chancellor condones the delay by a special order. Attested copies of certificates in support of qualifications for Matriculation/School Leaving, Graduation, Postgraduation examination as also for Doctorate degree, be attached to the application. Canvassing in any form will disqualify the candidate.

Application forms can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Rs. 2/- or by making a written request to the Assistant Registrar (Estt-I), Panjab University, accompanied by a self-addressed stamped (worth Rs. 3.40) envelope of 23x10 cms and postal order of Rs. 2/- drawn in favour of the Registrar, Panjab University, Chandigarh.

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055. Tel. 529157

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University News

MONDAY, OCTOBER 26, 1987 Rs. 1.50

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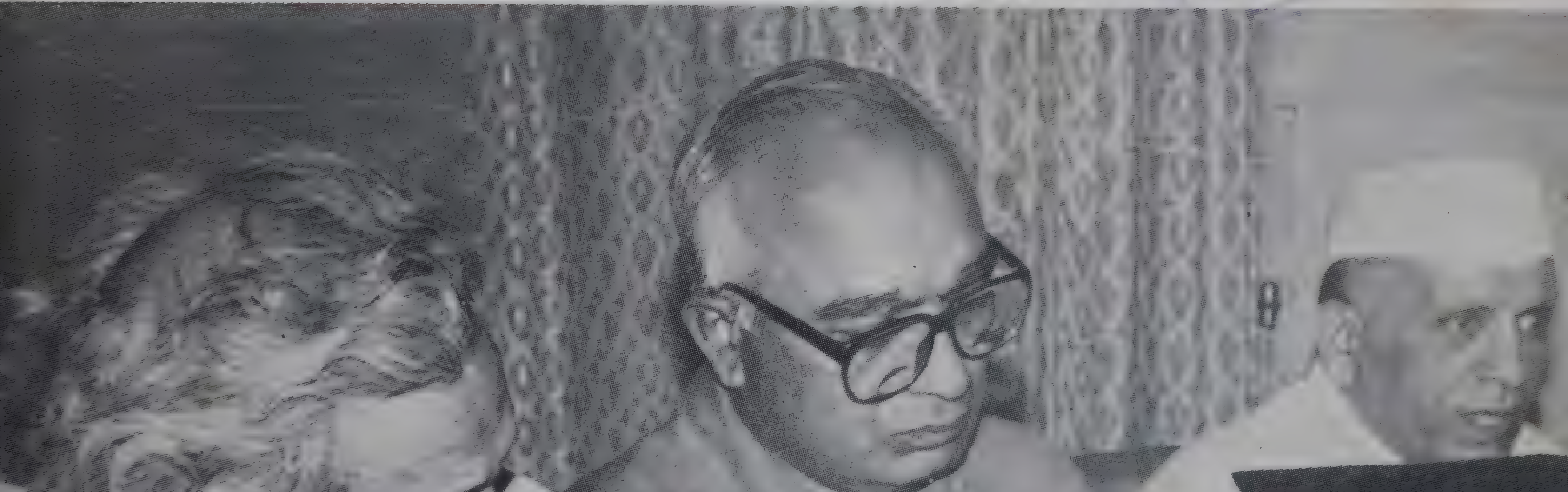
CONFLICT MANAGEMENT



From L to R : Prof. Moonis Raza, VC, University of Delhi, Prof. G. Ram Reddy, President, AIU & VC, Indira Gandhi National Open University and Prof. Ramlal Parikh, VC, Gujarat Vidyapith at the Group Discussion on Conflict Management organised by the AIU at Aligarh Muslim University

PUNJAB AGRICULTURAL UNIVERSITY

ADMISSION NOTICE

Applications are invited for admission to Ph.D. programme of the University in the following subjects for the academic session, 1987-88 commencing from 29th December, 1987

College of Agriculture

Agronomy; Animal Science (Animal Breeding, Animal Nutrition, Animal Productiong Physiology, Livestock Production & Management); Extension Education; Entomology; Food Technology; Pomology; Vegetable Crops; Plant Breeding; Plant Pathology; Soil Sciences.

College of Basic Sciences & Humanities

Botany; Chemistry; Biochemistry; Economics; Sociology; Genetics; Statistics; Microbiology; Zoology; Business Administration.

College of Veterinary Science

Vety. Bacteriology and Virology; Vety. Surgery & Radiology; Vety. Medicine; Vety. Pharmacology; Vety. Parasitology; Vety. Pathology; Vety. Physiology.

College of Agricultural Engineering

Farm Power & Machinery; Soil & Water Engineering; Processing & Agricultural Structures; Electrical Engineering.

School of Energy Studies in Agriculture

Energy Science & Technology (in the field of Engineering, Microbiology, Biochemistry and Agricultural Economics.)

College of Home Science

Foods & Nutrition; Home Science Education & Extension.

Minimum Qualifications at a Glance

(i) **For Inservice Candidates.** A grade point average of 3.20 (4.00 basis) or 50% marks at Master's level in the respective field and a grade point average of 2.00 (4.00 basis) or 40% marks at graduation level.

Inservice candidates shall be an employee of PAU/Punjab Government/Union Territory of Chandigarh having atleast 5 years service with three years service after getting Master's degree on the last date of receipt of application.

Inservice candidates securing a minimum of 50% marks or above according to the table below rules (iii) of Rule 18 (b) of Admission Rules will be eligible for admission.

(ii) **For other than Inservice candidates.** A grade point average of 3.40 (4.00 basis) or 60% marks at master's level in the respective field and a grade point average of 2.00 basis) or 50% marks at graduation level.

Note: (i) Please see Prospectus for the academic year, 1987-88 for detailed qualifications, reservation and fellowship, etc.

(ii) The candidates seeking admission to Ph.D. programme in **Agricultural Engineering** will have to appear for a qualifying examination except the candidates for Energy Science & Technology and Electrical Engineering in the major field of specialization Engineering Sciences and Mathematics at 9.30 A.M. in the College of Agricultural Engineering, PAU, Ludhiana in addition to the interview on the scheduled date at 3.00 P.M. They should come prepared for qualifying examination and report to the Dean, College of Agricultural Engineering at 9.15 A.M. on 4.12.1987.

Prospectus and application forms: Available from the office of the Registrar, Punjab Agricultural University, Ludhiana on payment of Rs. 5/- per copy by cash at counter or by sending crossed Indian Postal Order(s) for Rs. 7/- payable to the Comptroller, Punjab Agricultural University at PAU Post Office, Ludhiana.

Last date for receipt of applications : 20.11.1987

Note: (iii) Only one application will be entertained for Ph.D. Programme on the basis of first preference of subject mentioned in the application form in the order of interview fixed below. Incomplete and without testimonials applications are liable to be rejected.

Interviews : Interviews will be held on the following dates, time and place mentioned against the subject:

Subject	Date	Time	Place of interview
Agronomy, Extension Eduation, Entomology, Plant Pathology, Food Technology	30.11.87	9.00 A.M	Pal Auditorium Complex, PAU, Ludhiana
Plant Breeding, Pomology, Vegetable Crops, Animal Science and Soils	1.12.87	9.00 A.M.	—do—
Botany, Chemistry, Biochemistry, Business Administration	2.12.87	9.00 A.M.	—do—
Genetics, Zoology, Microbiology, Economics, Sociology, Statistics	3.12.87	9.00 A.M.	—do—
College of Home Science	4.12.87	9.00 A.M.	—do—
College of Vety. Science	4.12.87	10.00 A.M.	—do—
College of Agricultural Engineering and Energy Science & Technology	4.12.87	3.00 P.M.	—do—

Note: No separate interview letter will be issued. No T.A./D.A. is admissible

D.S. Multani
REGISTRAR

UNIVERSITY NEWS

VOL. XXV OCTOBER 26
No. 43 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor :
SUTINDER SINGH

Conflict Management

Syed Hashim Ali*

A study of the conflicts facing the institutions of higher learning presupposes a full understanding of the objectives of higher education so that the obstacles which the conflicts create in the attainment of those objectives may be fully appreciated. Higher education in modern society seeks to preserve, transmit and advance knowledge, and is committed to change. The importance of education as an instrument of change and progress has been underlined over and over again by various educational experts, committees and commissions in India. The Kothari Commission (1964-66) observed: "The destiny of India is now being shaped in her classrooms. This, we believe, is no mere rhetoric. In a world based on science and technology, it is education that determines the level of prosperity, welfare and security of the people. On the quality and number of persons coming out of our schools and colleges will depend our success in the great enterprise of national reconstruction........"[1] The Commisson went to the extent of asserting that "if this change on a grand scale is to be achieved without violent revolution (and even then it would be still necessary) there is one instrument and one instrument only, that can be used: Education".[2] It, therefore, strongly recommended that the framers of educational policy should try" to relate it (Education) to the life, needs and aspirations of the people and thereby make it a powerful instrument of social, economic and cultural transformation necessary for the realisation of the national goals."[3] About the functions of the universities, the Commission said: "while the fundamental values to which the universities owe their allegiance are largely unrelated to time or circumstance, their functions change from time to time. In the rapidly changing contemporary world, universities are undergoing profound changes in their scope, functions and organisation and are in a process of rapid evolution. They are assuming new functions and the older ones are increasing in range, depth and complexity".[4]

In the light of the recommendations of the Commission the National Policy of Education was formulated in 1968. The policy was revised in 1985 to formulate new strategies to meet the growing and changing needs of the Indian society. The document entitled "Challenge of Education—a policy perspective" enunciates the new policy and programmes of the Government in the field of education.

The new Policy document on Education and the above excerpts from the Education Commission's report clearly bring out the importance and the magnitude of the task before the Indian universities. It is for this reason that of late the university administration in India has been undergoing significant changes under the impulses of a changing and growing Indian society. During the last three decades, rapid expansion of educational facilities at the higher level, changing methods of instruction, reforms in the system of examination, intensification of research

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[Based on author's Valedictory Address delivered at the Group Discussion on Conflict Management organised by the Association of Indian Universities at Aligarh Muslim University an 7-10 October, 1987]

**Vice-Chancellor, Aligarh Muslim University, Aligarh.*

activities, phenomenal rise in student enrolment, galloping budgets of Indian universities, steady growth of the teaching and the non-teaching staff, management of a vastly expanding estate and provision of an increasing number of essential facilities in aid of teaching and research have made university administration a challenging task. It has grown enormously both in magnitude and complexities. The obsolete and out-moded methods of administration can no longer cope with the situation which now calls for the application of the techniques of scientific management.

The problems of administration and decision making in institutions of higher learning have become all the more complex and vexatious owing to growing coflicts of varied nature which are being generated by various factors and forces, both within the institutions and outside. Conflicts may broadly be divided into four categories:

(i) Inter-personal conflicts,

(ii) Group conflicts,

(iii) Conflicts inherent in the organisational structure and administrative system of an institution, and

(iv) Conflicts generated from outside.

"Conflict Management" is a new tool of the management science which is being applied widely in industry and commerce to resolve disputes, differences and disagreements in order to ensure optimal level of functioning of the commercial and industrial units. This technique can be used profitably in educational institutions as well, at least to reduce conflicts if not to eliminate them altogether. Surely, it will facilitate the achievement of the goals of higher education.

It should, however, be borne in mind that conflict is not always bad or undesirable. Conflict can also be of some value to an institution or enterprise. Franklin Roosevelt felt that conflict was necessary for effective policy making. The differences of opinion among advisers and functionaries on an issue cause a thorough examination of the issue in all its aspects and enable the top executive to eliminate bias and thus take the most rational and result oriented decision in a given situation. In the context of the institutions of higher learning healthy conflict or difference of opinion is desirable in academic bodies such as the Board of Studies, the Faculty, the Committee for Advanced Studies and Research, the Academic Council, etc. Honest and constructive dissent will certainly lead to formation of better academic policies for raising the academic standards, improving the quality of research and for attaining of other objectives of the institution. Conflicts, however, turn out to be a curse and a serious impediment in the way of achieving goals when they emanate from extra-academic causes. It is these conflicts that are assuming grave proportions in Indian universities and call for a dispassionate and cool analysis. The factors and forces which are engendering these conflicts may be summed up as follows :

(i) India has been undergoing a social transformation since Independence. In fact the country has witnessed a social upheaval during the last four decades. As a result of the abolition of the Zamindari system and untouchability, efforts of the government at various levels to uplift the scheduled castes, scheduled tribes, backward classes and other weaker sections of the society, industrialisation at a massive scale which has changed the the character of the Indian economy from the agrarian to an industrial one, and numerous legislative and other measures of the government to remove social inequalities, the centuries-old class structure based on the feudal system is crumbling down. A new social set-up is coming up in its place. The process of social stratification is making substantial demands on Universities for preferential treatment of the weaker sections in matters of admissions and appointments. The failure of the already over-crowded and overburdened universities to meet the demands adequately generates conflicts.

(ii) The post-Independence era is characterised by an upsurge in the field of education. The number of educational institutions has increased tremendously at all levels. In 1950-51 the total number of institutions was 2,31,000 which rose to an estimated 7,55,000 in 1984-85. The total student population shot up from 2.8 crores in 1950-51 to 11.4 crores in 1982-83. The country had just 20 universities in 1947, the number rose to 76 in 1968-69 and tody we have 170 universities and university level institutions. However, this spectacular growth has been haphazard and without thoughtful planning. The result is that many of the universities lack the essential infrastructure and adequate financial support. While they are incapable of providing good teaching and proper research facilities even to a reasonable number of students, their enrolment figures are much too high. Despite their resistance the number of students continues to swell year after year, making their problems all the more serious. This obviously creates a tussle between them and the funding agencies. Moreover, such a sorry state of affairs in prejudicial to the interests of higher education.

(iii) Political polarisation of universities is yet another source of conflicts. India is a multi-religious, multi-lingual, multi-racial, multi-cultural and multi-caste country. It abounds in political and non-political organisations based on each of these characteristics. The political parties vie with each other in creating their bases and strongholds in the universities in order to enlarge their area of influence and increase their following. They have no interest in education and no understanding of the educational problems. They betray dismal ignorance about the role of institutions of higher learning in society. They are simply interested in furthering their political ends. Conscious of the power of the youth in launching or carrying on any movement or for spreading any ideology, they concentrate on young men and women for their youth wings. They use the students and teachers for their nefarious political game without caring in the least for the studies of the students and their future. The All India Sikh Students Federation and the Assam Gana Parishad may be cited as instances of deep involvement of students in politics. It is evident that political parties vitiate the academic atmosphere of the universities. Their conflicting ideologies, programmes and ends generate conflicts and clashes amongst them on the one hand, and with the university administration, on the other. In their sustained struggle to have a dominating position in the affairs of the university so as to increase the number of their active members and supporters, the political parties spare no efforts in capturing as many faculty and administrative positions as they possibly can. The campuses are thus turned into political arenas. Sometimes violent methods are also used to pressurise the authorities resulting in the closure of the universities for short or long periods. Frequent recurrence of such ugly situations paralysing the functioning of the university often culminate in zero academic sessions. It is unfortunate that this has become a recurring feature of the higher educational set-up in the country. There are quite a number of universities afflicted with this malady and they conduct examinations of the last few years alongwith the examinations of the current year.

(iv) Besides political wings, universities and other institutions of higher learning also have non-political groups based on kinship, regional affinity, professional and class affiliation, personal relationship and sectarian bonds. These groups also endeavour to secure a commanding position in the affairs of the university so as to promote the interests of their men. The unions of the teachers, students and karamcharis frequently use pressure tactics of dharnas, gheraos and strikes for getting their demands accepted. Their demands often run counter to the interests of the institutions and sometimes the demands are too fantastic to merit any consideration by the authorities. The other groups strive to get closer to the Vice-Chancellor and other people in authority in a bid to get their men inducted in various academic and administrative positions by hook or crook, fair or foul means. Manipulations of the worst type are made to eliminate deserving and meritorious candidates who are without the support or backing of any pressure group. It need hardly be stressed that such activities of the trade unions, pressure groups and other vested interests breed both inter-personal and inter-group conflicts within the institution. More often than not the conflicts pose a serious threat to the very objectives of higher education. The authorities sometimes succumb to pressure groups willy-nilly and all protestations about raising the academic standards, improving the quality of research and revamping the administration are reduced to a ridicule.

(v) The organisational structure, policies and procedures of an institution also sometimes give rise to conflicts. A well planned and sound organisational structure is the backbone of any institution. An ill-thought out organisational structure, even if manned with the best staff, will not yield the desired results. The heirarchical pattern should be designed carefully and intelligently keeping in view the objectives of the institution and the results to be achieved. The number of officials at each level of the heirarchy should be determined objectively on the basis of well defined norms of work and keeping in mind the span of control and the area of responsibility at each level. The functions and duties of each functionary from the top executive down to the lowest official should be clearly defined. Care should be taken to guard against dual control of workers by two functionaries. The system should provide for delegation of authority whenever so warranted by the exigencies of work. It should also have an inbuilt mechanism for performance appraisal and effective control. Unfortunately the organisational structure of most of the universities are a replica of the government model. The methods and procedures are also the same. It is yet to be realised that the problems and the conditions of academic institutions are different from those of the government and that academic administration is distinct from public administration. The existing organisational structures and administrative systems of the institutions of higher learning generate conflicts as they tend to be exceedingly subjective and prone to inordinate delays in the disposal of cases and lack of effective mechanism for control and performance appraisal.

(vi) Our educational system still continues to be excessively academic in its contents and character. The much needed vocationalisation at the Higher Secondary level has been miserably slow. It is very depressing to note that even after 11 years of the introduction of the 10+2+3 scheme, the present intake in vocational programmes at the plus two level is about 72,000 covering only 2.5% of the student population. The result is that the pressure on the already over-crowded universities continues unabated. The new Policy Document on Education mentions that many of the 157 universities and 5,000 colleges have not been provided with a minimum level of infrastructure for the maintenance of quality and standards. How to cope with the swelling student population when they lack essential facilities even for their present numbers is a serious problem confronting the universities and is one of the major causes of conflicts.

(vii) There are complaints that calculated efforts are being made by the government to erode university autonomy slowly but steadily. The interference of the government in the affairs of universities is increasing on two pretexts—realisation of egalitarian goals and ensuring effective use of the resources by the universities. In the Acts of some of the State Universities the Chancellor has been vested with very wide powers including the power to dismiss the Vice-Chancellor if the latter, in his judgement, fails to ensure proper observance of the Act, the Statutes and the Ordinances. This state of affairs is surely disconcerting.

"The case for autonomy of universities", observed the Kothari Commission, "rests on the fundamental consideration that, without it, universities cannot discharge their principal functions like teaching, research and service to the community..........."[5] Again the Committee of Model Act for Universities observed : "Autonomy for a university is not a matter of fundamental right, as it were, but it is a condition for its efficient functioning and for enabling it to achieve the true ideals."[6]

From these excerpts it is evident that autonomy is vitally important for the functioning of a university. Moreover, the concept of university autonomy has to be understood and appreciated in a wider perspective, in the context of a system of interdependent variables—polity, economy, judiciary, society, etc. There can be no absolute autonomy implying complete independence, for, such an autonomy will only lead to chaos and anarchy. Autonomy presupposes accountability; it is a condition precedent to academic freedom. Without accountability no autonomy can be conceived. The universities like other autonomous organisations, including the government, are accountable to the public who pay the taxes and support them. They cannot, therefore, be treated as an exception to this basic and universally applicable principle. Once this condition is accepted, the universities should have full freedom to manage their internal affairs in the manner they like and there should be no interference or meddling from the government or from the funding agency in their internal functioning.

The Association of Indian Universities (AIU) should take up specific complaints about erosion of autonomy in certain universities. Complete data should be collected in this behalf in order to chalk out a course of action to prevent the recurrence of such onslaughts on university autonomy. Pernicious provisions in the Acts of some of the State Universities infringing their autonomy should be studied carefully by the AIU and then their cases taken up with the concerned authorities for the amendment of such provisions.

Finance is the most potent weapon in the hands of the University Grants Commission (UGC) or the State Govt. to erode university autonomy. The AIU should conduct a study of the financial affairs of a few selected universities from different regions and formulate financial norms on the basis of that study. The availability of such norms, based on empirical data, will go a long way in reducing wide financial disparities among Indian universities and will also decrease the potency of the UGC's financial weapon. The universities will then be in a better and stronger position to demand funds from the UGC or the State Government on the basis of those norms and their actual needs. The present range of financial disparity may be gauged from the fact that while the Hyderabad University is spending Rs. 28,283 per student and the JNU Rs. 27,529 the per capita expenditure in Aligarh is as low as Rs. 14, 461. Evidently, this diconcerting situation can be remedied only with the help of standard norms.

After reviewing the major causes of conflicts in the country's institutions of higher learning I would now like to make a few suggestions for improving the situation.

(1) The proliferation of non-viable universities should stop forthwith. No new university should be established unless adequate infrastructure is available and adequate recurring financial support can be assured to it. At present only 4.8% of the relevant age group is enrolled in higher education. It would be highly unwise to go on spending scarce financial resources without even achieving the minimum results. Owing to the poor infrastructure and dismal finances of many of the Indian universities the dropouts and failures together account for more than 59% of the students enrolled. Surely, this is a sheer wastage of the limited financial resources.

(2) Delinking of degrees from jobs upto a certain level will be a measure of far reaching consequences. It will reduce pressure of students on the already over strained universities. At present a university degree is considered essential for a very large majority of jobs. Delinking the degree from jobs will change the situation radically.

(3) Diversification and vocationalisation of education at the 10+2 level brooks no further delay. Steps should be taken in this behalf without any further loss of time in order to relieve the universities from excessive pressures and to help them streamline their academic and research programmes so as to become viable institutions of higher learning.

(4) Correspondence courses and open universities should also be encouraged and supported in a big way to enable the existing universities to concentrate fully on teaching of a higher standard and research of a fine quality. The mass media should be exploited fully for the correspondence courses programme.

(5) Politics cannot be banished completely from the universities. However, the universities should prepare codes of conduct for the students, teachers and other staff members requiring them not to use the university premises for their political activities and programmes so that inter-group clashes and quarrels might not vitiate the academic atmosphere of the university. The employees should also be required not to give any statement to the Press on a political issue. The students should be encouraged to take interest in the politics of transformation and development. They should keep themselves fully abreast of the latest developments and important political issues both at home and abroad. The young-men and women of today are the leaders of tomorrow. It is, however, divisive, dirty and violent politics which should be discouraged and from which the students should be kept aloof.

(6) The universities have now out-grown the stage when they could be managed by obsolete and outmoded methods. The existing organisational structure and the administrative system of the Indian universities need to be examined thoroughly. Not only that the university administration has grown tremendously in magnitude, its complexities have also increased enormously. Application of the modern techniques of management is the effective

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solution to these problems. The modern methods of scientific management will revamp completely the existing cumbersome system, improve the level of efficiency and ensure a better and more effective management of its academic affairs. Every university should, therefore, attempt a thorough study of its administrative system with the help of management experts who should be asked to suggest an alternative system that will ensure better functioning at lesser cost. In this connection I would like to suggest that the university administrators (Registrars, Deputy Registrars, Assistant Registrars and functionaries of equal status in the Finance Department) should attend short term courses in management training so that they might become acquainted with the latest devices and techniques of the management science. The Western universities have liberally adopted a number of new management techniques such as MBO, PPB, etc. which have reduced administrative costs, on the one hand, and improved the level of efficiency, on the other. I would also suggest that the AIU should sponsor comparative management studies of Indian universities. Such studies have been made in the West and yielded good results. By making a comparative study of the administrative systems and procedures of two universities, each of the participating university can learn from the experiences of the other.

Purposive change can be brought about through management policies. The desired change can be caused more quickly, with lesser cost and in a better way with new mangement techniques and devices rather than with the obsolete and out-dated methods.

(7) Delegation of authority is an important facet of university administration. In the context of the ever increasing pressure of work on the Vice-Chancellor and other important functionaries of the university, delegation of authority has become exceedingly urgent. The present administrative system is pregnant with serious flaws and defects. Not all the papers and cases put up to the Vice-Chancellor are of such a nature which need his consideration and orders. When the Vice-Chancellor remains awfully busy with routine and petty matters, he cannot obviously find time to attend to the developmental needs of the university. The Vice-Chancellor can be easily relieved of a large number of routine matters through delegation of powers which can be dealt with at appropriate levels in the hierarchy. This can, however, be done when there is provision in the Statutes of a university to delegate powers. In the Acts of many of the State universities no such provision for delegation of power exists. ☐

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1. India, Ministry of Education. Report of the Education Commission, 1964-66. p.1.
2. Ibid, p.4.
3. Ibid, p.613
4. Ibid, p.274
5. Report of the Education Commission (1964-66) p. 326.
6. Ministry of Education. Report of the Committee on Model Act for Universities. p. 8.

ANNAMALAI UNIVERSITY

ANNAMALAINAGAR

55th Annual Convocation—1987

Convocation for conferring Degrees, Titles and Diplomas will be held at Annamalainagar during the Second Week of December, 1987.

Filled in applications from candidates for taking degrees and titles **In Person/In Absentia** must reach the Registrar on or before **20th November, 1987.** Printed forms of applications can be obtained by sending a self-addressed envelope affixing 0.60p stamp.

Post Graduates, Professional and Research degree holders and Prize Winners in all other degrees are alone given the option for taking their degrees "**In Person**". All the rest are required to apply for taking degrees "**In Absentia**".

Correspondence Courses

Those who have not already submitted their applications for the degree/diploma (In Absentia) may submit the same before **20th November, 1987.**

R. Rajamanickam
REGISTRAR

CONFLICT MANAGEMENT

Universities and Political Parties

G.B.K. Hooja*

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Politics in Human Affairs

Dismayed by the large gap between the promises made by the politicians and political parties and their performance, the electorate, both the elite and the commoners are inclined to give a poor rating to the practitioners of politics. The acrimony engendered by the rough and tumble of eletroral campaigns and the accompanying dubious horse-trading dissuades refined and cultured gentlemen from entering into the arena of politics and tends to strengthen the impression that the game of politics is not for them. But viewed dispassionately, can it be denied that each one of has too willing a politician lurking inside us ? As a matter of fact, it shall have to be conceded that politics is as inescapable in social life as economics. In all social activities, politics as well as economics must inevitably enter. They lubricate the social wheel; it is another matter that they may turn out to the source of evil and conflict; nevertheless, they are necessary evils, and it remains for the social scientists and researchers to find ways and means of eliminating their evil propensities, of guiding them into healthy channels, for otherwise what is all this talk of university autonomy about ? If universities will not study this highly critical and sophisticated subject, who shall ?

Left to primitive impulses, there is a tendency in human affairs to go berserk. Like all fast-moving machines, human mind; that is human emotions too need to be controlled or braked when they tend to run amok. That is why the ancient ages of India prayed :

may manah shivasamkalpamastu—let my mind be of good intentions.

That is what Professor Gokhale, the political guru of Mahatma Gandhi, whom the latter chose to address as Mahatma, before he himself received the sobriquet, meant by saying that politics should be spiritualized. It is not this what a revered philosopher scientist living amongst us, namely, Dr. D.S. Kothari means when he says that Science and spirituality should march hand in hand ?

Provoked by a major challenge to his self-respect and national pride, after the train incident in far-away South Africa, Gandhiji felt called upon to enter politics; and he readily acceded to do so when urged by his compatriots to stay back and guide them. But it was essentially a religious pursuit for him, a link in the chain of his experiments with Truth. He did not seek personal power or aggrandizement. Let Gandhiji speak :

> "If I seem to take part in politics, it is because politics encircle us today like the coil of a snake from which one cannot get out, no matter how much one tries. I wish, therefore, to wrestle with the snake, as I have been doing, more or less with success, consciously since 1894, unconsciously, as I have now discovered, eversince reaching the years of discretion."

He continues :

> "Quite selfishly, as I wish to live in peace in the midst of bellowing storm howling round me, I have with myself and my friends by introducing religion into politics. Let me explain what I mean by religion. It is not the Hindu religion, which I certainly prize above all other religions, but the religion which transcends Hinduism, which changes one's very nature, which binds one indissolubly to the Truth within and which purifies."

Gandhi's concept of religion was cosmopolitan, universal, cosmic. According to him, religion constituted permament element in human nature, which constantly strove to know its Maker and appreciated the true correspondence between the Maker and itself. Narrow dogmatism and formal ritualism was not his cup of religion. Non-violence and Truth were its corner-stones. Like all other virtues, these too had to be inculcated by assiduous discipline. That is why he had enjoined eleven vows for the inmates of his ashrama. These were besides Ahimsa and truth, celibacy, non-theft, non-possession, body-labour, control of the palate, fearlessness, equal respect for all religions, swadeshi, and refusal to treat anybody as un-

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touchable. The object was to build a strong, disciplined army of satyagrahis fit to wage a war against not only the imperial power, but also the forces of evil within and without.

Amongst the virtues in a satyagrahi, he discovered self restraint to be the basic. While western politicians would like to draw a line between private conduct and political behaviour, Gandhi held that private morality had public consequences and, therefore, stressed the importance of 'inner' over the 'external' restraints of persons in positions of authority, relying upon ethical sanctions to guarantee public obligations. Satya Harishchandra was his model.

When Gandhi spoke of the political goal of swaraj, he clearly meant that only those who could rule themselves in the sense of self-restraint could rule themselves in the sense of controlling the political apparatus. A statement well worth musing over by those who control the levers of government of various institutions, including the universities.

To quote Gandhi again :

"To see the universal and all-pervading spirit of Truth face to face one must be able to love the meanest of creation as oneself. And a man who aspires after that cannot afford to keep out of any field of life. That is why my devotion to Truth has drawn me into the field of politics ... those who say that religion has nothing to do with politics do not know what religion means."

Having thus laid down two postulates (a) that politics is unavoidable in the affairs of men, and (b) that it is both desirable and possible to spiritualize it, we may examine the university system and how it may respond to them on the ground.

Politics and Universities

In their very well-researched book, *Education and Politics in India* (1972) Susanne and Lloyd Rudolph and their learned collaborators have tried to identify and analyze the processes that have largely shaped educational policy and performance in India over the last 150 years, with special reference to the relationship between politics and education. As pointed out by them, Governments have always used the educational sub-system to promote their plans and policies.

The modern system of education in India, as is well-known, had its origin in the policy of anglicization of the elite adopted by the East India Company in pursuance of the famous minute recorded by Thomas Macaulay in 1835. The object was to build a class of people who would act as clerks and scribes of the British rulers and who would in due course, become anglicised in spirit, upholders of the British culture in this land of pagans. Raja Ram Mohum Roy had also added his weight to the victory of the anglicists over the classicists, although he himself never gave up his upanishadic moorings, and continued to work for a synthesis of the Oriental and Occidental cultures, but in the process supported by the Government aid, the Western system, modelled on the University of London, came to be transplanted on the Indian soil. Challenging notes were no doubt sounded by Indian patriots, notable amongst them being Swami Shraddhananda, Gurudeva Tagore, Sri Aurobindo, Mahatma Gandhi, Lala Lajpat Rai, Dr. Zakir Hussain. But their influence remained marginal. By and large, the British transplant flourished as for instance in the Aligarh, Deccan and DAV movement and English education became the dominant partner in an Anglo-oriental milieu. In a manner of reckoning it insulated the university graduates from their Indian environment and diverted university attention and energies from local requirements; yet at the same time, it may be observed that the study of Western Philosophies tended to unlock the brains of the beneficiaries, thus leading to liberationist stirrings in political, social and economic spheres, a fallout, certainly unintended by the originators of the system. In the process, it turned out to be a mixed blessing.

Advent of Independence marked a watershed in the history of higher education in India. The ascedancy of Democracy has forced the educational system to respond to local needs. Although the structure of education has remained unchanged, there is discernible transformation in the content and language of education. Indian Universities are now more alive to their local environment and tend to play an increasingly relevant role as agents of socio-economic change.

Politicians are forced to respond to the demands of their constituents that avenues education 'should be expanded so that they can improve their social and economic standard. This has resulted in the diversion of larger resources and personnel to the educational system. Another result, of course, is heightened competition between politicians and educators for the control of the people, resources and goals involved.

It will thus be seen that political authority has all along influenced educational goals and horizons. While the British Raj lasted the educational sub-system subserved its imperial interests; and with the establishment of the Republic; it has now appropriately changed its direction, to subserve public interest.

This is not to say that the relationship between politics and education is unidirectional. Education, in turn, also influences politics. As has been observed above, the theories and programmes of nationalist leaders as well as the study of liberating philosophies of the West had a formidable impact on Indian political goals. It is in this background that the responsibility of the universities to study and examine various political systems, not excluding utopias, and thereby advance the frontiers of knowledge and develop new designs and strategies for consideration by policy makers operating in a Democratic set-up becomes self-evident, particularly, in a country, which carried the load of 2/3rd of its population being illiterate and 1/3rd lying below the poverty line, ill-nourished, under employed, shelterless and which has, therefore, yet miles to go before it can claim to have gained real swaraj. It goes without saying that the idealism that swayed politicians and national forces during the historic struggle for Indian freedom has ebbed away and given place to politics more oriented to power, personal gain and *kursi-daur*.

In this situation, control over the educational apparatus offers a ready-made leverage in the game of political advancement; at the same time may educational managers would like to use it as a spring-board for political power. When this struggle assumes to no-holds-barred tempo, the educational system is vitiated, and excellence in education is the first casualty. It is here that the true *guru* is put to a test; how to insulate the goal of progessionalism in education from the contamination of unabashed political ambition and *soude-baazi*.

This is difficult to achieve if the academic community itself is riven by internal dissentions and surcharged by over-weening personal ambititions. Here again, the Gandhian formula of spiritualization of politics and the supremacy of inner over external restraints shows the path, and what is the best training ground for it, if not the academic seminaries ?

Indian Educational Service

In this context, the need to organize an all-India Educational Service (as it existed from 1864 to 1924) may also be considered. It should be counterpart of the I.A.S. in the educational sphere; and its members should enjoy equivalent status and emoluments to attract the best talent. This service may be used largely for administrative purposes, and may develop and expertise to meet the disciplinary and other organizational needs of the burgeoning educational system. Those who find pure educational and intellectual pursuits more in line with their nature and aptitude may yet have an opportunity to be diverted to the academic stream, even as such members of the I.C.S. were diverted to the Judiciary in the British times, for when all is said and done, the primary role of higher education is to develop creativity, innovation and research leading to the extension of frontiers of knowledge. To waste the time and talent of scholarly people in comparatively barren administrative fields is neither good economics nor good policy. The task of dealing with legislators, ministers, civil servants, trade unions, of fund-raising and development of real estate may best be left to the administrative wing of the I.E.S.

To sum up, in this republican age, under a democratic form of government, based on adult franchise, universities cannot live in isolation and politics must inevitably have an impact on university culture. There will be political parties, and there will be teachers with different ideologies. However, if they are scrupulous enough not to use their students as cannon-fodder, all may yet be well with the educational system and the nation.

In the Vedic prayer, we pray that our motherland may be bestowed with learned scholars; bold, stout-hearted warriors, scrupulous businessmen, keen agriculturists, devoted craftsmen, mothers who give birth to valiant sons, milk-yielding cows, strong oxen, swift horses, furit-laden trees, bounteous harvests and life-giving rains, in short all that goes to make a nation strong and happy. May our universities provide the required atmosphere to induce these blessings. ☐

Training Educational Administrators

Vidya Agarwal*

Education is an individual as well as a social service. On the one hand it has to prepare the students for life and on the other it has to serve a social purpose. Both the tasks are of a highly complex nature which can be fulfilled only by highly trained personnel. The educational administrators have to bear the responsibility of monitoring and developing such a team of developed personnel. Also, they have to provide the facilities and proper environment for achieving these purposes. This calls for highly knowledgeable and skilled administrators. Training of managers for industries and other organizations is considered essential. The science of management in the field of industry has seen in the past lots of new developments. It has become a highly developed science. Many new concepts and theories have emerged which are being utilized for increasing production and managing the industry as effectively as possible. Emphasis on identification of scientific objectives, policy planning, conflict management, organizational development, personnel management, motivating employees, leadership and evaluation have resulted in a revolution in the field of industrial management. It can be said that today's industrial management is much more effective and efficient as compared to what it was ten-fifteen years ago. But the scenario in the field of education is entirely different. If any administrator in the field of education is asked a question 'what do you manage for or what is the objective you want to achieve', he may not be able to answer the question in a convincing manner. Similarly, it is difficult to say what dominant styles of administration or management the educational administrators use in their day-to-day work. The awareness of the theories and concepts of management science in case of educational administrators in India is very poor. They utterly lack conceptual knowledge of the management science. They also lack managerial skills. They have poor insight into human behaviour with the result they fail to get work from their subordinates. They are ignorant of leadership theories and effective styles of administration. The educational administrators in India learn routine administration through practice and in a trial and error manner. They only learn how to dispose of office files. They hardly learn how efforts can be made to achieve the objectives for which they are recruited. The overall outcome of this state of affairs is that the educational administrators in India, by and large, are ineffective and the objectives of organization are not achieved.

This state of affairs is because of the fact that educational administrators in India are not imparted any kind of training in administration, the job they have to do for half their life. In the absence of any training how can they learn what administration is. Training aims at developing specific knowledge, attitudes and skills necessary for doing a particular job. Educational administration is a very complex job in the sense that it deals with human behaviour which is highly variable and difficult to be controlled. It requires, therefore, a highly specialized knowledge, very specific attitudes and highly sophisticated skills on the part of administrators. In order to be effective an educational administrator must know very specifically what he actually wants to achieve. In other words, he must have the competence of identifying and specifying the objectives. Next to this, he must be able to choose and use the most effective styles of administration. It is also necessary for him to learn how to motivate people working with him, how to resolve conflict, how to plan, how to evaluate the achievement of the objectives. The development of this kind of awareness and such skills is possible only through some kind of formal training and orientation.

Before a training programme for educational administrators is started, the assessment of training needs is essential. In any assessment of training needs, one seeks the answers to a few questions. 'Is there any need to train educational administrators'? 'Who, if anyone, needs training'? 'What training do they need'? 'The questions themselves are simple, but obtaining good answers to them is one on the most difficult and important aspect of the total training process.

As regards the first question, 'is there any need to train the educational administrators,' it is being felt in developing countries that various tasks and challenges of educational development call for enhancing the capabilities of educational administrators to grapple with their challenging educational needs. There is a general feeling in these countries that educational administration needs a great deal of qualitative improvement. The role of training in educational administration is now well recognized for this purpose.

**Lecturer, Department of Education, University of Allahabad, Allahabad.*

In India also, the Ministry of Human Resource Development has started thinking in terms of training the educational administrators. National Policy on Education—1986 states that "Special attention will be paid to the training of educational planners, administrators and heads of institutions. Institutional arrangements for this purpose should be set up in stages" (Part X.10.5).

Though the need of training educational administrators is being felt by all, there is a lack of adequate knowledge of the need to which such training should be directed. Here the assessment of training need becomes essential. But the job is not so simple as it appears to be. In this regard Price observes that a training need exists when there is a gap between the present performance of an employee or group of employees and the desired performance.

Training in the field of educational administration is a very neglected aspect in India. While educational administrators readily acknowledge the necessity for more effective training for other employees, their reluctance to acknowledge the same necessity in respect of themselves has been the biggest obstacle in the introduction and execution of effective training programmes. There is an urgent need, therefore, for overcoming resistance to a training programme by demonstrating the concrete results of training. This can be done by explaining to the administrators the importance of training and how it will help them perform better.

As regards the second question, 'who, if anyone, needs training', I personally feel that the training in educational administration is required for educational administrators at all levels, from higher level to the lower one. Programme of Action, 1986 also has emphasized the training of educational planners, administrators and heads of institutions at all levels (Section XXIV).

The third question 'what training do they need', is still more difficult to answer. Briggs and Bhagia conducted a study on 'Professional Preparation of Educational Administrators in Developing Countries'. On the basis of their study they came to know that three types of special learnings are considered very important for educational administrators in developing countries :

(i) Understanding of value system and educational policies of the country;

(ii) Understanding of and coping with special problems and gaps in educational administration, and

(iii) Skills of performing one's specific roles and responsibilities.

In this regard the Ministry of Human Resource Development, Government of India, has described its future plan in Programme of Action :

(i) Training of Senior level personnel will be designed to provide some exposure to educational perspectives and the role of education in social development and, in addition, include institutional planning and development, curriculum planning and, programme evaluation and review technique,

(ii) For Heads of Institutions training in financial rules and procedures, legal provisions governing educational activities, personnel management, programme planning and data management and review techniques will be considered essential.

But before training is initiated, the objectives of the training programme for various categories of personnel like planners, administrators and heads of institutions will be defined in terms of job profiles of various levels of personnel and the required expertise, skill and institutional development (Programme of Action, Section XXIV : 20).

Briggs and Bhagia also suggest that curricula for training programmes for various levels of educational administrators need to be developed after identifying different types of requirements and capabilities, roles and responsibilities of different categories of educational administrators. For this purpose, 'job analysis' or 'skills analysis' has to be done. Job analysis involves the following five steps :

(i) Analysis and determination of the major requirements of the specific job;

(ii) Identification of the tasks needed to be accomplished to meet the job requirements;

(iii) Understanding of the procedures needed to accomplish each of the job tasks;

(iv) Analysis of the knowledge and skills needed to accomplish the procedures; and

(v) Identification of any special problem of the job and analysis of any particular skill needed to meet the problem.

When the different types of requirements and capabilities, roles and responsibilities of different categories of educational administrators are identified on the basis of job analysis, a curricula for training programmes for educational administrators at various levels may be developed. Though a separate curricula will be required for each level of educational administrator, elaborate educational planning of programmes, projects, tasks and activities at various levels in financial management, leadership, handling of human problems, inspection and supervision, management of conflict, management of personnel, etc., which are the major functions of educational administration, need special attention in training educational administrators for meeting the challenges of implementing educational policies and programmes. ☐

REFERENCES

Briggs, D.K. and N.M. Bhagia, "Professional Preparation of Educational Administrators In Developing Countries", *EPA Bulletin*, Vol. 8 Nos. 1 & 2, April and July 1985.

Ministry of Human Resource Development, Government of India, *National Policy on Education—1986*, Part X : 10.5.—' *Programme of Action*, Section XXIV : 18, 19, 20.

Group Discussion on Conflict Management

The Association of Indian Universities (AIU) organised, in collaboration with the Aligarh Muslim University, a Group Discussion on Conflict Management at Aligarh from October 7 to 10, 1987. Registrars and other senior administrative personnel working in the universities and university level institutions attended.

Dr. Jagdish Narain, Secretary, AIU, in his opening remarks outlined this new activity of the Association and referred to the two earlier group discussions organised at Delhi and Udaipur for the Vice-Chancellors and Pro-Vice-Chancellors. AIU is organising the present group discussion on Conflict Management for the benefit of senior university administrators, he added. He thanked the University Grants Commission (UGC) for meeting the travel expenses of the participants.

Prof. G. Ram Reddy, President, AIU and VC, Indira Gandhi National Open University, initiated the discussion on University Autonomy. He said that autonomy was very crucial for the functioning of the universities. The old concepts of autonomy are no longer valid. These days universities are totally dependent on the State for their finances. But there should be no interference in the academic affairs of the university. He wanted the university system to be vigilant against any external interference in their affairs.

Prof. Moonis Raza, VC, Delhi University, asserted that university autonomy is to be preserved. It presupposes a system of interdependence, and the concepts of autonomy and accountability have to go together. The universities are self-managers and self-correctors.

Prof. Ramlal Parikh, VC, Gujarat Vidyapith referred to the prevailing situation in universities and felt that their problems cannot be discussed in isolation. An integrated approach has to be adopted. If autonomy is to be preserved, the participating units should realise their responsibilities and function harmoniously. Conflicts should be avoided. He wanted that no external force should influence the decision making process in the universities and they should be able to resolve their problems through a system of checks and balances. A conciliatory process should be evolved internally. He referred to the gradual erosion of university autonomy during the last two decades. The recent removal of the Vice-Chancellors under the pleasure clause of the Chancellors in certain States was a slur on the university system. He wanted that University Acts should be amended immediately so that the universities function efficiently and without any external pressures.

Shri Anand Sarup, former Secretary to Government of India in the Ministry of Human Resource Development, said that university autonomy cannot be had on a platter but it is to be earned. Universities should undertake introspection and analyse the factors which go in preserving and strengthening the autonomy. They should be able to keep peace and order on the campus, and declare results on time. He stressed the need for employing rigorous methods for recruitment of staff-teaching and non-teaching—in educational institutions. He wanted the grants of these institutions to be linked with their performance.

Shri R.K. Chhabra, former Secretary, UGC, initiated discussion on Delegation of Powers and Exercise of Authority and its Limitations. He felt that the delegation of power in universities is quite different from the delegation of financial and administrative powers in the government departments and army establishments. The delegation in university system should lead to better and efficient functioning of these institutions and should be based on human considerations. He referred to universities as corporate bodies composed of students and teachers, where administrators have to play a key role as managers and implementors. However, they have to act within the framework of University Act and Statutes so that they do not act in an arbitrary manner. Their actions can always be questioned in a court of law so that they have to be very careful while exercising their authority. He said that delegation of academic power is more difficult than administrative and financial delegation as it has far reaching consequences.

Prof. Moonis Raza in his presentation on the Role of Political Parties in Universities made a distinction between politicking and politics. He felt that there was nothing wrong in students and teachers taking part in the politics of education but they should not involve themselves in politicking.

Prof. Rais Ahmed, former Director, NCERT and Vice-Chairman of UGC, initiated discussion on the Management of Change in University System. He felt that it is always difficult to bring about quick changes in the university systems. But once the objectives for change are accepted, special preparation is needed for quick implementation otherwise the changes will not take proper shape. The monitoring of the mode of change is equally important. Also, opinion in favour of change is to be generated quietly. In a democratic system the universities cannot function in isolation and consultation has to take place in the academic institutions at all levels. But the problem is that the university bodies over the years have become unmanageable and there is a need for making them compact so that quick decisions are taken. Various suggestions have been made to streamline the university bodies. He referred to the agricultural universities model, which is working efficiently. The basic idea of committee system was to ensure the participation and consultation.

Prof. S.K. Agrawala, VC, Agra University, in his presentation on Grievance Machinery and Arbitration emphasised the need for proper review of administrative decisions. He felt that the nature of grievance would determine the machinery for its redressal. He was of the view that the grievance redressal machinery in the university system should be clearly provided in university Act and Statutes. Any specific matter requiring special attention may be referred to the ad hoc machinery. He felt that there should be a provision for representation to the Chancellor or Visitor aganist the decision of university bodies. He, however, felt that University Ombudsman would be helpful in removing many grievances.

Mrs. Rama Devi, initiated the discussion in regard to the setting up of Educational Tribunal. She clarified that the tribunals would be established wherever there is a High Court or its bench so that disputes in the universities may be looked into expeditiously. Regarding the composition of Educational Tribunal, she said that it would be presided over by High Court/Supreme Court judge. The other members could be eminent educationists and experienced administrators, who are familiar with the working of the universities. If the proposal was accepted by the government, the jurisdiction of lower courts and high courts for consideration of educational matters will be taken away and will vest in the Tribunal.

Prof. B.S. Sharma, Pro-Vice-Chancellor, Indira Gandhi National Open University in his presentation emphasised the necessity to have an understanding in the system. He pleaded for greater productivity. He felt that conflicts if properly handled could result in evolution of better and efficient administrative machinery. He referred to the various sources of conflicts arising in the university system. The foremost cause was the lack of information, bad communication and confusion in regard to the objectives. He was against the exercise of positional power by academics and administrators. Constant adjustments should be made at all levels to avoid upheavals.

Prof. Syed Hashim Ali, VC, Aligarh Muslim University in his Valedictory Address (published elsewhere in this issue) listed various causes that led to conflicts and offered possible solutions for avoiding conflicts in the university system. □

National Conference on Role of Universities in Implementation of New Education Policy

The Association of Indian Universities will organise, in collaboration with Osmania University, a National Conference on Role of Universities in Implementation of New Education Policy on December 18 & 19, 1987 at Hyderadad.

The New **Education Policy (NEP)** visualises the role of higher education as providing people with an opportunity to reflect on the critical, social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills.

The role of universities is crucial in the matter since one of the important functions of universities and institutes of higher learning is to provide specialized scientific and technical skills, imparting of knowledge, contributing to every sector of national development and improving social conduct and behaviour. Thus, a major share of responsibilities, as envisaged in the NEP, rests with the universities and other educational institutions. It becomes imperative for the educational community to try to define some of the important issues involved in the management of higher education, the efficiency improvement, the financing of higher education, youth services and physical fitness programmes, education in human values, etc. in the light of the NEP recommendations.

The deliberations of the Conference will focus on the following topics :

I. Management of Higher Education
II. Improvement in Efficiency
III. New Strategies in Higher Education

PROGRAMME

December, 18, 1987 (Friday)

10.00 A.M.	INAUGURATION
11.30 to 1.00	SESSION I
2.00 to 4.30	SESSION II

December 19, 1987 (Saturday)

9.00 to 11.30 A.M	SESSION III
12.00 to 1.30	SESSION IV
2.30 to 4.30	SESSION V (Plenary)

Convenor

Dr. V. Natarajan
Project Director (Exams.)
Association of Indian Universities
AIU House, 16 Kotla Marg
New Delhi 110002.
Telephone : 3310059
Telex : 31-5578 AIU IN
Telegram : 'ASINDU'

Conference on Management of Sea

The School of International Studies at the Jawaharlal Nehru University will host the second meeting of the International Geographical Union Study Group in Marine Geography from April 12-22 next year. About 100 participants including 25 from foreign countries are expected to attend the four-day Conference. The Conference is expected to help in better understanding and appreciation of the marine resources, environment and its protection. It will bring together scientific understanding and knowledge about the marine environment and will generate international cooperation and understanding in particular along the north-south coordinates, involving the uses of marine resources and their protection.

According to Prof. R. C. Sharma, Professor of Geography, JNU, who is the convenor of the the Conference, marine scientists, geologists, fishery experts, ocean-technologists, geographer, international law experts, economists, technocrats and policy-makers from various institutions, research organisations and the Government representatives manning the different related departments are expected to participate. The Conference will have eight Technical Sessions in addition to inaugural and valedictory functions. On the fifth day there will be a Business Session of the members of the International Geographical Union Study Group and members of the Organising Committee.

Dynamics of Green Revolution

A three-day National Conference on "Dynamics of Green Revolution-Geographical Perspectives" was held at Punjabi University, Patiala from October 5 to 7, 1987. Jointly organised by the Punjabi University's Geography Department and the National Association of Geographers of India, the conference was inaugurated by Professor Yogindra K. Alagh, Member, Planning Commission. Professor O.P. Bhardwaj, the Founder Professor and Head of the University's Geography Department presided.

Professor Alagh, in his address, said that from the experiences in the past it was now necessary to make the land and water management policies the central focus of the planning strategies. Marketing, commercial information infrastructure and modern agro-processing techniques would have to be integrated into agricultural planning to maximise the income generating capacity of Indian agriculture. He also underlined the Prime Minister's special concern for appropriate planning techniques for each agro-climatic region of the country and the policy focus of delivery, support, procurement and processing systems to increase employment and income.

More than 55 research papers were presented during the 5 technical sessions of the conference which was attended by over 50 delegates from different parts of the country.

Mangalore Varsity Offers New Courses

The Mangalore University has introduced new programmes and courses under the Faculties of Arts, Science & Technology, Commerce and Medicine from the current academic session. These include :

(i) Optional Courses at M. A. English, viz, (a) Indian Writing in English and in Translation; (b) A Course on Ancient Indian Aesthetics & Literary Criticism.

(ii) Certificate Course in Epigraphy.

(iii) Certificate Course in Kannada.

(iv) Computer Science as an optional subject for B.Sc. Degree Programme.

(v) One Year P. G. Diploma Programme in Computer Applications.

(vi) P.G. Diploma Programme in Business Management.

(vii) P.G. Diploma Programme in Production Management.

(viii) B.Sc. Nursing Course.

Higher Education and Employment

The Indian Society for Educationists, Madras, recently organised one-day Seminar on 'Linking Higher Education and Employment' at the University of Madras. His Excellency Shri S.L. Khurana, Governor of Tamil Nadu, inaugurated the Seminar. Hon'ble Thiru V. R. Nedunchezhiyan, Minister for Finance, Government of Tamil Nadu delivered the presidential address.

The seminar focussed on "Education Employment Linkage" and discussed the following topics.

(1). Transaction between Educationists and Industry through :

(a) Sector wise assessment of employment potential and accordingly regulating higher education enrolment;

(b) Higher education system to develop self-employment potentiality;

(c) Continuous evaluation of job prospects for restructuring degree courses;

(d) Financial support to educational institutions by the employment sectors;

(e) Field placement and work experience during higher education;

(f) Preparing students for small-scale and unorganised sectors of employment.

(2) Efforts to change social attitude towards Education and Employment.

(3) Autonomous colleges to pioneer in introducing employment specific degree courses.

Papers were also presented on 'Degrees, Job and Manpower Planning', 'Industrially Relevant University Education,' 'National Testing Service' and 'Higher Education for Employment of Women'.

Eminent educationists, Principals of colleges and Senior Professors of different disciplines participated in the seminar.

Demogenetic Project for Punjabi Varsity

The Ministry of Environment and Forests has awarded a research project titled "The Impact of Modernization Activities and Changing Environment on Demogenetic Composition of Human Populations of Garhwal, U.P. Himalayas" under Man and Biosphere (MAB) programmes in India to Professor I.J.S. Bansal and Dr. S.M.S. Chahal of the Department of Human Biology, Punjabi University, Patiala. The objective of the study is to discern the role of various factors such as health status, geographic isolation, communication and migration in bringing about the ongoing changes in the demographic profile and genetic constitution of the local population.

Orientation Programme for Government Executives

The Department of Business Administration & Management of Amravati University organised a three-day management orientation programme for government executives during September this year. All the Sub-Divisional Officers of Amravati Revenue Division were the participants in this programme Shri L.N. Lakhanpal, Commissioner of Amravati inaugurated the programme.

The topics selected for the programme were intended to improve the managerial qualities of these government officers by imparting new and accepted techniques of management. These included Transactional Analysis, Management by Objectives, Management Theories, Zero Base Budgeting, Time Management, Management of Change, Marketing for government executives and Communications Management.

J.E.E. '88

The Joint Entrance Examination for admission to the I.I.Ts at Bombay, Delhi, Kanpur, Kharagpur and Madras and Institute of Technology, B.H.U., Varanasi will be held on **May 4 and 5, 1988.** Unlike previous years, this year there will be only three papers viz. Chemistry, Physics and Mathematics. **The paper in English is being dropped from J.E.E. '88 onwards.**

News from Agril. Varsities

Research on Alley Cropping

Australian scientists are researching a farming system which allows for the growth of two crops on the same piece of land at the same time. One has the potential to save the farmer money in the cost of nitrogen fertilisers; the other provides a conventional cash return to the grower. The farming system involves the planting of a cereal crop such as maize or sorghum between alleys of a legume crop (leucaena) which acts as an efficient agent for the collection of nitrogen from the air and its transfer to the soil.

The system, known as alley cropping, involves the timely prun-

INTER-UNIVERSITY YOUTH FESTIVALS 1987-88

(Sponsored by AIU and Deptt. of Youth Affairs & Sports, Govt of India)

Zone	Host Universities & Venue	Dates
North	Aligarh Muslim University, Aligarh	November 21-24, 1987
West	University of Bombay, Bombay	December 4-7, 1987
South	Madurai Kamaraj University, Madurai	December 26-29, 1987
East	Manipur University, Imphal	January 4-7, 1988
National	Amravati University & Punjabrao Krishi Vidyapeeth, Akola	January 25-29, 1988

ing of the fast-growing legume throughout the growth cycle of the cereal crop with the farmer leaving the cuttings in the paddock to decompose to mulch and act as a nutrient source for the other crop. The mulch enhances the fertility of the soil by releasing quantities of nitrogen, improving crop productivity and at the same time reducing soil erosion.

The work is being undertaken at Griffith University in Brisbane and the division of tropical crops and pastures at the Commonwealth Scientific and Industrial Research Organization.

News from Abroad

1987 Unesco Prize for Peace Education

Mr. M'Bow, Director-General, UNESCO, presented the 1987 Unesco Prize for Peace Education to the Swiss journalist and author Laurence Deonna and to the ecumenical organization "Servicio Paz y Justicia en America Latina in Paris recently.

Speaking on the occasion, the Director-General underlined Unesco's role in preserving peace and the activities it carried out in order "to foster a state of mind conducive to peace". "While within the United Nations system Unesco is not concerned with negotiations of a directly political nature," said Mr. M'Bow, "its contribution to peace is nontheless indispensable. Through its cooperation in all spheres of intellectual life, it plays a key role in the constructive mobilization of consciences, the shaping of outlooks, and the foregoing of a commitment to peace and mutual understanding among peoples based on respect for each other's cultures and the realization of their common aspiration towards progress."

Over the past 20 years, Mrs. Deonna has published a number of moving articles in Swiss and foreign newspapers, which bear witness to her determination to bring peoples together through dialogue and mutual understanding without any ideological or religious bias. Her most recent book *La guerre a deux voix* (the war with two voices), deals with women in Israel and Egypt. Her professed aim is to "establish a dialogue...between women who are enemies, who have been battered by war, and to show that what they have gone through, the way they live, the way they feel, what they say and, above all, what they do not say, is tragically, absurdly or logically the same".

The "Servicio Paz y Justicia en America Latina" (SERPAJ), which is based in Rio de Janeiro (Brazil), came into being in 1971 and was set up in Colombia in 1974. Describing itself as an "ecumenical Christian organization" with a non-violent vocation, SERPAJ runs peace education courses as well as training courses for grass-roots leaders. Accepting the prize on behalf of the organization, Father Perez Aguirre said that SERPAJ was greatly honoured and encouraged by the distinction, and that it would be widely felt in the region.

The Unesco Prize for Peace Education, which is worth 60,000 dollars, was established in 1980, thanks to a generous donation of one million dollars from the Japan Ship-building Industry Foundation. Its aim is to reward a particularly outstanding example of activity designed to alert public opinion and mobilize the conscience of mankind in the cause of peace, in the spirit of Unesco's Constitution and the Charter of the United Nations.

PG Courses in Islam and Christian-Muslim Relations

The University of Birmingham's Centre for the Study of Islam and Christian-Muslim Relations offers teaching resources for the university's postgraduate programmes in Islamic Studies. The Programme is established within the Faculty of Arts and is resourced by a specialist Centre related to the Department of Theology. The Unit comprises faculty with expertise in the major disciplines of usul ad-din, Islamic history and contemporary developments in Islamic religious thought, with regional expertise in the Middle East, South and South-East Asia, Africa and, very importantly, in Europe with its increasingly large Muslim communities. The Centre possesses a large and well-maintained library of printed books and academic periodicals in European languages, mainly English, and Arabic, and specialist documentation on Islam in Europe and Africa. An important collection of approximately 2,300 Arabic Islamic manuscripts is also housed in the Library and available to research students.

The Centre currently offers the following courses :

M. A. by course work and dissertation; M. Phil, M. Litt., and Ph.D. by supervised research presented in a thesis of approximately 40,000, 60,000 and 80,000 words respectively ; P. G. Courses leading to University of Birmingham's Diplomas including Diploma in Islam and Diploma in Islam and Muslims in Britain; and special research programmes in the areas of Muslims in Europe, Islam and Christian Muslim Relations in Africa and the History and Theology of Christian Muslim Relations.

Further details can be had from the Director, Centre for the Study of Islam and Christian-Muslim Relations, Selly Oak Colleges, 996, Bristol Road, Birmingham B29 6LQ, U.K.

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Physics

1. Antony Shaju. *Laser spectroscopy of molecules.* BHU. Dr. S.N. Thakur.

2. Bisht, Rajendra Singh. *Equilibrium properties of liquid crystals.* BHU. Dr. Shri Singh.

3. Jugran, Bhawati Prasad. *Three body approach to transfer reactions.* BHU. Dr. V.S. Mathur.

4. Mishra, Jiten Kumar. *Studies of nuclear spectra.* BHU. Dr. P.C. Sood.

5. Prasad, Chintapenta Durga. *Non-equilibrium properties of semi-conductor surfaces.* BHU. Dr. R.S. Srivastava.

6 Prasad, Ila. *Semi-conductor-insulator-semiconductor interface.* BHU. Dr. R.S. Srivastava.

7. Pravesh, Chandranand. *Crystal growth and characterisation of semiconducting crystals.* BHU. Dr. R.S. Tiwari.

8. Roy, Mihir Kumar. *Transport properties of amorphous solids.* BHU. Dr. K.C. Sood.

9. Sabitha, P. *Synthesis, characterisation and thermal stability of amorphous materials.* BHU. Dr. R.S. Tiwari.

10. Sahay, Pradosh Prakash. *Semiconductor-insulator interface.* BHU. Dr. R.S. Srivastava.

11. Sanjay Kumar. *Molecular theory of fluids.* BHU. Dr. J. Ram.

12. Singh, Adesh Kumar. *Lattice dynamic properties of perfect and imperfect compound semiconductors.* BHU. Dr. S.S. Kushwaha.

13. Singh, Kamala Prasad. *Study of solid electrolytes.* BHU. Dr. P.N. Gupta.

14. Singh, Kamalendra. *Spectroscopic and structural studies on some biomolecules.* BHU. Dr. D.K. Rai.

15. Singh, Vipin Bihari. *Molecular spectroscopy.* BHU. Dr. S.B. Rai.

16. Srinivasu, Vallabhapurapu Vijaya. *Mossbauer spectroscopic studies.* BHU. Dr. A.K. Nigam.

17. Torane, J.V. *Studies on development of biomass energy on waste land.* Shivaji. Dr. S.H. Pawar.

18. Tripathi, Chandra Charu. *Investigations on structural electrical behaviour of layered materials.* BHU. Dr. G.N. Srivastava and Dr. A.R. Singh.

19. Upendra Kumar. *Studies in Raman spectroscopy.* BHU. Dr. C.M. Pathak and Dr. P.C. Mishra.

20. Wali, A.A. *On certain problems of non-linear optical phenomena in the propagation and absorption of laser beams in different media.* Shivaji. Dr. M.K. Soudagar.

Chemistry

1. Chaudhari, S.K. *Thermodynamics of binary liquid mixtures.* Shivaji. Dr. S.S. Katti.

2. Chumbhale, V.R. *Alkylation reactions over synthetic zeolites.* Shivaji. Dr. P. Ratnasamy.

3. Dahiya, Krishan Kumar. *Metal complexes with-O-S-N denor ligands.* Delhi. Dr. N.K. Kaushik.

4. Das, Kshamav. *Physio-chemical studies on clays.* Kerala. Dr. C.G.R. Nair and Dr. M. Lalithambika.

5. Gaur, Rajesh Kumar. *Nucleic acid chemistry : Synthetic DNA.* Delhi. Dr. M. Atrayi.

6. Gupta, Charu. *Synthesis of heterocyclic compounds as potential antifungal and anti-bacterial agents.* Delhi. Prof. V.K. Ahluwalia.

7. Gupta, Prem Chandra. *Co-ordination chemistry.* Delhi. Prof. B.S. Garg.

8. Gupta, Yogesh Kumar. *Chemistry of natural products.* BHU. Dr. Mahendra Sahai.

9. John, George. *Studies on applications of chemically modified natural polymers.* Kerala. Dr. C.K. Sadasivan Pillai, Dr. K.G. Das and Dr. K. Saramma.

10. Khanduri, Chandra Has. *Studies in heterocyclic compounds.* Delhi. Prof. V.K. Ahluwalia.

11. Mohammad Sultan. *Coordination chemistry.* BHU. Dr. H.P. Srivastava.

12. Nair, Maya P. *Studies on photo-electrochemical energy conversion system.* Kerala. Dr. K.V.C. Rao and Dr. C.G.R. Nair.

13. Prasad, Ashok Kumar. *Synthetic studies in natural isoflavanones, hanoisoflavanones and related polyphenols.* Delhi. Prof. A.C. Jain.

14. Ram Prasad. *Studies on some sulphur and nitrogen containing compounds.* BHU. Dr. P.K. Srivastava.

15. Sharma, Rakesh Kumar. *Synthesis of macrocyclic lactams and dilactones.* Delhi. Dr. V.S. Parmar.

16. Singh, Akhileshwar Pd. *Application of radioisotope in physico-chemical studies.* BHU. Dr. Ramji Tripathi.

17. Singh, Anuradha. *Stereochemical studies of organic compounds.* BHU. Dr. Radhey Mohan Singh.

18. Singh, Bijay Kumar. *Studies on photo-electrochemical solar cells.* BHU. Dr. Lal Bahadur.

19. Singh, Om Prakash. *Contact glow-discharge electrolysis.* BHU. Dr. S. Sengupta.

20. Singh, Pramod Kumar. *Complex compounds.* Delhi. Prof. B.S. Garg.

21. Singh, Rana Rajendra. *Synthesis and characterization of metal complexes of macrocyclic ligands having resemblance to biological systems.* Delhi. Dr. Ramesh Chandra.

22. Singh, Vinay Kumar. *Organo-metallic chemistry.* BHU. Dr. V.D. Gupta.

23. Srivastava, Madhu Rani. *Magnetic and spectral studies of 3d-metal complexes of biologically active ligands.* BHU. Dr. T.R. Rao.

24. Srivastava, Satendra Narayan Lal. *A study on the equality milk and milk products in the urban area of Varanasi.* BHU. Dr. Mahendra Sahai.

25. Uma Devi, P. *Studies on structure and properties of complex oxides of vanadium, niobium and molybdenum.* Kerala. Dr. K. Ravindran Nair.

26. Vaidya, Subhash Hari. *Modelling of multiphase reactors.* Shivaji. Dr. R.V. Choudhary.

27. Varghese, T.L. *Graft co-polymerization of vinyl-monomer on to special functional group triglyceride oil-caster oil and its characterization.* Kerala. Dr. Y. N. Krishnamoorthy.

28. Varkey, Bessy Abraham. *Corrosion inhibition and passivity of ferrous metals.* Delhi. Dr. Gurmeet Singh.

29. Varma, P.R. Harikrishna. *Studies on chemical methods of preparation of fine ceramic powder.* Kerala. Dr. K.G.K. Warrier and Dr. C.G.R. Nair.

30. Varshney, Manoj. *Structure and dynamic studies of microemulsions by pulsed N.M.R. spectroscopy* Delhi. Dr. Amarnath Maitra.

Earth Sciences

1. Murali Krishna, K. *Invertebrate palaeontology and stratigraphy.* BHU. Dr. A.K. Jaitly.

2. Ojha, Jai Ram. *Mesozoic stratigraphy.* BHU. Dr. Jai Krishna.

3. Pandey, Bindhyachal. *Mesozoic stratigraphy.* BHU. Dr. Jai Krishna.

4. Rai, Arun Kumar. *Sedimentary petrology.* BHU. Dr. B.K. Chatterjee,

5. Singh, Surya Pratap. *Metamorphic petrology.* BHU. Prof. R.K. Lal.

6. Shinde. M.R. *Precambrian geology of Balaram Area, Banaskantha District, North Gujarat.* Shivaji, Dr. K.B. Pawar.

7. Varshney, Sanjeev Kumar. *Carbonates in alluvial sequences : A case study of the Siwalik Foreland Basin.* Delhi. Prof. S.K. Tandon.

Engineering & Technology

1. Das, Gautam. *Structure property correlations in titanium alloys.* BHU. Prof. D.S. Sarsa,

2. Jha, Jib Nath. *Repid solidifications of steels.* BHU. Prof. C. Suryanarayana and Dr. S.N. Ojha.

3. Kulkarni, Prakash Jayant. *Bandwidth compression of video signals by digital techniques.* Shivaji. Dr. N.R. Phadnis.

4. Maheswara Rao, Toleti Brahma Vishnu. *Role of remote sensing in mineral exploration and environment.* BHU. Prof. B.B. Dhar.

5. Neetha, R. *Vibration analysis of annular sandwich plate using boundary element method.* Kerala. Dr. M. Sivaramakrishna Iyer.

6. Pal, Gorakh Nath. *Measurement of rheological properties of polymeric solutions.* BHU. Dr. Surendra Kumar Tewari.

7. Sharma, Jeetendra Kumar. *Mathematical modelling and response analysis of power controllers.* BHU. Dr. S.N. Singh

8. Singh, Birendra Kumar. *Water inflow model for an U.G. Mine of Jharia Coalfields.* BHU. Dr. T. N. Singh, and Dr. D.P. Singh.

9. Singh, Raghwendra. *Structural weaknesses in coal seams and its effect on roof fall.* BHU. Dr. T.N. Singh and Dr. D.P. Singh.

10. Singh, Rajendra. *Close-range remote sensing of strata-deformation due to mining.* BHU. Dr. T.N. Singh and Dr. D.P. Singh.

11. Singh, Vinay Kumar. *Process development.* BHU. Dr. P.N. Tiwari.

12. Tewari, Hari Shankar. *Electrical and structural properties of substituted perovskite type compounds.* BHU. Prof. V.B. Taro.

13. Yadava, Deepmala. *Studies on copper catalysts.* BHU. Dr. Ram Prasad.

BIOLOGICAL SCIENCES

Marine Biology

1. Arumugham, N. *Studies on certain ecological aspects of Manakkudy Estuary.* Kerala. Dr. P. Natarajan.

Biophysics

1. Sri Rama Chandra, Sabinkar Yuvaraj. *Studies on enzymes of thermophilic cyanobacteria.* BHU. Prof. S. Srinivasan.

Biochemistry

1. Jayanti, Sushma. *A study on the antipollutant effect of some aquatic plants.* BHU. Dr. H.P. Pandey.

2. Mathews, Mary Susan. *Biochemical changes in pregnant rats on parathione toxicity.* Kerala. Dr. K. Saraswathy Devi

3. Pandey, Sanjay Kumar. *Effect of some anticonvalesant drugs on cerebral metabolism on rats.* BHU. Dr. Raj Shankar.

4. Prasad, Jai Prakash. *Biochemical study of certain leaf protein concentrates.* BHU. Dr. H.P. Pandey and Dr. R.H. Singh.

5. Sassaie, Mohammad Javed. *Development of simple sensitive immune assays for clinical diagnosis.* BHU. Dr. H.P. Pandey.

6. Singh, Arun Kumar. *Studies on mitochondrial deoxyribonucleic acid.* BHU. Dr. G.R K. Rao.

7. Srinivasamurty, Srinivasula. *Molecular biology of host virus interactions.* BHU. Prof. M. Chakravorty.

Botany

1. Harijan, Ram Chandra. *Phycology : Algal cytology.* BHU. Dr. R.B. Chaudhary.

2. Jayashree, S. *Morphogenic responses of some flowering plants.* Delhi. Prof S.C. Gupta.

3. Khatavkar, S.D. *Studies on bioindicators of industrial and domestic pollution.* Shivaji. Dr. R.K. Trivedy.

4. Mallick, Nirupama. *Algal biology.* BHU. L.C. Rai.

5. Pandey, Vidhu Shekhar. *Pollution ecology.* BHU. Dr. B.D. Tripathi.

6. Patil, B.J. *Studies in mucorales (zygomycetes).* Shivaji. Dr. M.S. Patil.

7. Srivastava, Nirupama. *Algal cytology.* BHU. Dr. B.R. Chaudhary.

Zoology

1. Ghosh, Dhruba. *Molecular parasitology.* Delhi. Dr. V.K. Bhasin.

2. Bahadur, Min. *Evolutionary cytogenetics.* BHU. Prof. T. Sharma.

3. Mehra, Neera. *In vitro studies on malaria parasite.* Delhi. Dr. V.K. Bhasin,

4. Menon, Jayasree. *Interaction af pesticides with non-target organisms.* Delhi. Dr. Rup Lal.

5. Mohanty, Jayashree. *Cytogenetics study in lower vertebrates.* BHU. Dr. R. Raman.

6. Mookerji, Nandita. *Feeding ecology of larval fishes.* Delhi. Dr. T.R. Rao.

7. Sheila, P.K. *Studies on the nasal and ocular copepad parasites of marine teleost fishes.* Kerala. Dr. S. Balaraman,

8. Sharma, Asha. *Feeding ecology of larval fishes.* Delhi, Dr. T.R. Rao.

9. Sinha, Shivendra Prasad. *Entomology : Insect physiology and toxicology.* Delhi. Dr. H.C. Agarwal.

Medical Sciences

1. Ajith Kumar, T. *Ecological studies of Ganges with special reference to water.* BHU. Prof. S.B. Gaur.

2. Asgar Ali. *Development of programmed drug delivery systems.* Delhi. Dr. S.N. Sharma.

3. Mishra, Sibananda. *Cerebral localization with neuropsychological test battery.* BHU. Dr. I. Sharma.

4. Misra, Mahendra Kumar. *A study on biochemical co-relates of anxiety.* BHU. Prof. R.H. Singh and Dr. H.P. Pandey.

5. Pavan Kumar. *Human genetics.* BHU. Dr. R. Bamezai.

6. Sarkar, Souvendra Nath. *Antacoid pharmacology.* BHU. Dr. S.B. Acharya.

7. Shanmugham Pillai. S.M. *Seborrhoeic dermatitis.* Kerala. Dr. B.K. Hareendran Nair.

8. Shanti Devi, Kangjam. *Oxidant toxicology and its protection with special reference to role of bioflavon oids.* BHU. Prof. S.S. Gambhir and Dr. B.L. Pandey.

9. Singh, Narendra Kumar. *Characterization of biological micromolecules synthesis following treatment with* anticulceric drugs. BHU. Dr. S.K. Patnaik and Dr. S.N. Pande.

10. Singh, Sanjay. *Development of release dosage forms of some newer drugs.* BHU. Dr. S.S. Jayeswal.

11. Sinha, Vivek Ranjan. *Study of parenteral depot preparation of pentazocine.* BHU. Dr. J.K. Pandit.

12. Varma, Shashjit Lal. *Psychiatric morbidity in first degree relation of schizophrenia.* B.H.U. Dr. I. Sharma.

13. Vasudeva Murthy, A.R. *A clinical study of pulse (Nadi) in the light of the concept of tridosha.* BHU. Prof. R.H. Singh.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Arjumand Shair Ali. *Some exact solutions and Petrov classifications of the Einstein field equations.* Osmania.

2. D' Souza, Robert John. *Some aspects of shear and natural convective flows obeying Arrhenius law of viscosity.* IIT Delhi. Prof. K.N. Mehta.

3. Jain, Vinod Kumar. *A study of certain identities of basic hypergeometric functions.* D.Sc. Rohilkhand.

4. Misra, J.N. *Some stability problems in hydrodynamics and hydromagnetics.* H.P.

5. Siddheshwar, Pradeep G. *Laminar and turbulent convection porous media.* Bangalore. Dr. N. Rudraiah.

6. Soni, Ratan Chand. *On the role of tachyons in relativity.* Durgawati.

7. Thukral, Jitendra Knmar. *Some classes of normal—like operators on Hilbert space.* Delhi.

8. Tiwari, Rajesh Kumar. *A study of mappings in topology.* HS Gour. Dr. S.N. Maheshwari.

Statistics

1. Bagai, Isha. *Tests for some statistical hypotheses under the competing risks model.* Panjab.

Physics

1. Ajay Kumar. *Photo-stimulated changes in some amorphous chalcogenide thin films.* IIT Delhi. Pror. K.L. Chopra and Dr. L.K. Malhotra.

2. Ashokan, R. *Raman study of ion-implanted and pulse laser annealed gallium arsenide.* IIT Delhi.

3. Bishat, Harsh Singh. *X-ray and neutron diffraction, electrical and magnetic studies of substituted lithium ferrites.* Nagpur. Dr. D.K. Kulkarni.

4. Biswas, Subhaschandra. *Structural studies of some organic compounds. Calcutta.*

5. Dhariya, Arvindchandra. *Some studies in the X-ray spectra.* Vikram. Dr. B.D. Srivastava.

6. Diwan, Deepti. *Studies on electro-optical properties of rare earth doped II-VI compounds.* Ravishankar. Dr. Shashi Bhushan.

7. Dubey, U.B. *Study of non-linear, time-dependent and damped systems.* Gorakhpur. Dr. S.K. Bose.

8. Mishra, Ashutosh. *Some studies in the X-rays absorption spectra.* Vikram. Dr. B.D Srivastava.

9. Mohan, Pramila. *Neutron transport studies in fast 232- and* 232Th *—233U systems.* Delhi.

10. Palanisamy, M. *Studies on ice nucleating behaviour of Agl—AgBr—Cul and Agl—Acgl systems.* Anna.

11. Rajaram Shenoy, M. *Studies on optical waveguides used in fiber and integrated optic devices.* IIT Delhi. Dr. K. Thyagarajan and Dr. Arun Kumar.

12. Sarkar, Mamata. *Resonance Raman studies on some metaloporphyrins.* NEHU. Dr. A.L. Verma.

13. Soni, Ravi Kant. *Resonant Raman scattering in III-V alloy semi-conductors.* IIT Delhi.

Chemistry

1. Bambzai, Rajinder Kumar. *Polymorphism of smectic liquid crystalline substances.* Jammu. Dr. N.K. Sharma.

2. Bandyopadhyay, Debabrata. *Chemical studies on the extractives of some Indian medicinal plants.* Calcutta.

3. Chattopadhyay, Prabir Kumar. *Chiro-optical studies on rare earth single crystals.* Calcutta.

4. Chaudhuri, Udaysankar. *Studies on some glycoside bearing Indian medicinal plants.* Calcutta.

5. Das, Pradip Kumar. *Studies on hydroxybiguanides.* IIT Kharagpur.

6. Dubey, Raj Kumar. *Some aspects of the bi-and tri-metallic alloxides of cobalts and copper.* Rajasthan. Dr. R.E. Mehrotra.

7. Grover, Neeraj. *Synthesis of analogues of neohydnocarpin.* Delhi.

8. Hussain, Mohammad Sardar. *Coordination chemistry of transition metal ions.* Karnatak. Dr. A.S.R. Murthy.

9. James, C. *Thermal annealing of chemical radiation damage and thermogravimetric studies on the effect of irradiation on the thermal decomposition of some inorganic salts.* Calicut. Dr. S. Madhavankutty Nair.

10. Maharana, Prafullo Kumar. *A study of radiation and catalytic induced reaction.* Berhampur.

11. Mohanty, Smita. *Synthetic studies in benzopyran derivatives and chalcones.* Delhi.

12. Naphade, Vilas J. *Study of the photo-chemical and chemical reactions in oxygen-nitrogen heterocyclic compounds.* Nagpur. Dr. B.J. Ghiya.

13. Narasimha Murthy, Lanka. *Physico-chemical and antimicrobial activity studies on the ternary complexes of copper (II) with 8-hydroxyguinoline/5-7-dihalo-8-hydroxyguinolines and acetyl-acetone/diethyldithiocarbamate as hetero ligands.* Nagarjuna.

14. Palsodkar, Suresh D. *Studies on rare earth complexes.* Nagpur. Dr. V.D. Deshpande.

15. Panda, Chittaranjan. *Coordination and solvent extraction behaviour of some actinides and zirconium.* Utkal.

16. Pipalia, D.B. *Studies on drug potential.* Saurashtra. Dr. A.R. Parikh.

17. Ramavat, Bharatkumar Kalidas. *Studies on chemistry of marine algae of Saurashtra Coast.* Bhavnagar. Dr. A.V. Rao.

18. Ramesh, Visvanathan. *Analytical applications of some commercial chelating extractants.* IIT Delhi. Prof. G.N. Rao.

19. Saha, Hara Lal. *Thermal decomposition reactions of metal carboxylate complexes in solid state.* Manipur. Dr. Samiran Mitra.

20. Shrivastava, Madhulika. *Studies on analytical application of 2-thiorotic acid and its camplex formations with some of the rare earth elements.* Ravishankar. Dr. G.S. Pandey.

21. Shukla, Dipak Balvantrai. *Utilisation of indigenous resources in the studies of synthetic zeolites and silicates.* Bhavnagar. Dr. V.P. Pandya.

22. Sunita Devi. *Studies on synthesis and biological activity of structures containing heteroatom.* Punjab Agrl.

Earth Sciences

1. Dogra, Niki Nand. *Palynostratigraphy of Jabalpur and Lameta Groups of sediments in the type area.* Panjab.

2. Girijesh Kumar. *Geochemistry of hydrothermally impregnated sediments from parts of East Pacific Rise.* Delhi.

3. Gurudev, M.B. *Studies on the banded iron formations and associated rocks between Harkal Amingarh Area, Bijapur District, Karnatak State.* Karnatak. Dr. B.K. Wodeyar.

4. Jaiprakash, B. Chikkanarayan. *Late pliestocene planktonic foraminifera from DSDP sites 214, 237 and 238 in the northern Indian Ocean : Systematics, paleontologic time series and paleoclimatic implications.* IIT Kharagpur.

5. Ravi Prakash, Somayajula. *Hydrogeological aspects of the Paravada area, Visakhapatnam District, Andhra Pradesh.* Andhra.

6. Ray, Tushar Kanti. *Ocean-atmosphere interaction and the summer monsoon of India.* IIT Delhi. Prof. P.K. Das and Dr. S.K. Dube.

7. Satya Prasad, Devalla. *Morphodynamics of the beaches and sand spit, Kakinada Bay, East Coast of India.* Andhra.

8. Satyanarayana Murty, Pappala. *Clay mineralogy and geochemistry of Visakhapatnam shelf sediments, East Coast of India.* Andhra.

9. Venkatesh, Akella Satya. *Palaeomagnetic and geochemical studies on dolerite dykes from Tamil Nadu, India.* Andhra.

Engineering & Technology

1. Acbekar, Ashok G. *Identification, classification and isomorphism of kinematic chains and mechanisms via identification codes.* IIT Delhi. Dr. V.P. Agrawal.

2. Anand, Jagdish Raj. *Analysis of incipient deformation of work material under orthogonal cutting conditions.* IIT Delhi. Dr. G.S. Sekhon and Dr. K.S. Shishodia.

3. Appa Rao, Dogga. *Development of optimal stilling basins for small drop structures.* IIT Kharagpur.

4. Chattopadhyay, Bikas Chandra. *A study on ultimate resistance on piles in cohesionless soil under pulling loads.* IIT Kharagpur.

5. Govindan, P. *Composite action and ductility of reinforced concrete frames with brick infill.* Anna.

6. Jain, Komal Chandra. *Investigation in surface grinding of hardened En24 steel.* IIT Delhi.

7. Kishta Reddy, N. *Physico-chemical studies on silicon-carbide silicon-nitride composite refactories and self-bonded silicon carbide.* Osmania.

8. Meher, Nidhi. *Simulation analysis and microprocessor-based state feedback control of a current source inverter induction motor (CSI-IM) drive.* IIT Kharagpur.

9. Naidu, M. Munirathnam. *Some studies in lot sizing for material reguirements planning systems.* IIT Delhi. Dr. N. Singh.

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11. Rakshit, Rashmi. *Evaluation of passive techniques in non-conditoned buildings.* IIT Delhi. Prof. H.P. Garg and Dr. N.K. Bansal.

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13. Sekar, R. *Persistent polarization studies in the poly blends of poly (methyl methacrylate) and poly (vinyl acetate).* IIT Delhi. Dr. T.C. Goal and Prof. P.K.C. Pillai.

14. Sinha, Sachchidanandan Prasad. *Computer aided analysis of hydraulic press structures.* IIT Kharagur.

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इन्दिरा गांधी राष्ट्रीय मुक्त विश्वविद्यालय

INDIRA GANDHI NATIONAL OPEN UNIVERSITY

YMCA CULTURAL CENTRE, 1, JAI SINGH ROAD, NEW DELHI-110001

Applications are invited from Indian citizens for filling up the following posts in the Indira Gandhi National Open University. The posts carry the Scales of Pay indicated against each post plus allowances as admissible under the University rules.

1. Joint Director (Engineering)

Scale of Pay : Rs. 1500-60-1800-100-2000
(To be revised)

Qualifications & Experience

(a) B.E./B. Tech. in Electronics/Telecommunications/Electrical Engineering or equivalent from a recognised University.

(b) At least ten years' professional experience in installation, operation and maintenance of radio and TV production equipment and facilities preferably in a broadcasting organisation.

OR

(a) M.E./M. Tech. in Electronics/Telecommunications/Electrical Engineering or its equivalent.

(b) At least seven years' experience in installation, operation and maintenance of radio and TV production equipment and facilities preferably in a broadcasting organisation.

Desirable

(a) Good knowledge of television systems in India and abroad and familiarity with television standards of different countries.

(b) Training in TV technical operations and maintenance from a recognised institute in India or abroad.

Age Limit : 50 years

2. Maintenance Engineers

Scale of Pay : Rs. 1200-50-1300-60-1900
(To be revised)

Qualifications & Experience

(b) B.E./B. Tech. in Electronics/Telecommunications/Electrical Engineering or its equivalent from a recognised University.

(b) At least five years' experience in maintenance of radio and/orTV production equipment and facilities.

OR

(a) M.E./M. Tech. in Electronics/ Telecommunications/Electrical Engineering or its equivalent.

(b) At least three years' experience in maintenance of radio and/or TV production equipment and facilities.

Desirable

Good knowledge of broadcasting systems in India and abroad.

Age Limit : 45 years

3. Producers

Scale of Pay : Rs. 700-40-1100-50-1600
(To be revised)

Qualifications & Experience

(a) Master's Degree from a recognised University, preferably in Mass Communications/Instructional Technology/Distance Education/Journalism.

(b) At least five years' experience in planning and production of radio/TV programmes.

Desirable

(a) Practical experience in production of educational TV/radio programmes.

(b) Ability to handle a variety of subjects and formats for production of a radio/television programmes including plays, features, documentary, etc.

Age Limit : 35 years

4. Senior Graphic Artist

Scale of Pay : Rs. 700-40-1100-50-1600
(To be revised)

Qualifications & Experience

(a) Degree from a recognised University.

(b) Degree/Deploma in Fine Arts/Commercial Arts/Graphics/Design/Animation from a recognised University or institution.

(c) At least five years' experience of production of Graphics for television/film/advertising agency.

Desirable

Experience of working with video animation equipment.

Age Limit : 35 years

5. Assistant Engineers

Scale of Pay : Rs. 700-40-900-EB-40-1100-50-1300
(To be revised)

Qualifications & Experience

(a) B.E./B. Tech. in Electronics/Telecommunications/Electrical Engineering or its equivalent from a recognised University.

(b) At least two years' experience in installation, operation and maintenance of radio/TV production equipment and facilities.

Desirable

Good knowledge of broadcasting systems in India and abroad.

Age Limit : 35 years

6. Research Officers

Scale of Pay : Rs. 700-40-900-EB-40-1100-50-1300
(To be revised)

Qualifications & Experience

(a) Master's Degree from a recognised University preferably in Mass Communication/Instructional Technology/Distance Education/Journalism.

(b) At least five years' experience in the field of formative/summative/process/feedback research.

Desirable

Doctorate in any of the above fields.

7. Analyst/Statistician

Scale of Pay : 700-40-900-EB-40-1100-50-1300 (To be revised)

Qualifications & Experience

(a) Master's Degree in Statistics.

(b) Five years' experience in statistical analysis preferably in the field of communication research.

Desirable

(a) Knowledge of computer systems as applied to statistical studies.

(b) Doctorate Degree in Statistics.

8. Cameramen

Scale of Pay : Rs. 2000-60-2300-EB-75-3200-100-3500 (Revised)

Qualifications & Experience

(a) Degree from a recognised University.

(b) Diploma in Cinematography from FTII or equivalent.

(c) At least two years' experience of working with film/video camera.

Desirable

(a) Experience of working in a television organisation.

(b) Good knowledge of broadcasting systems in India and abroad.

Age Limit : 35 years

9. Editors

Scale of Pay : Rs. 2000-60-2300-EB-75-3200-100-3500 (Revised)

Qualifications & Experience

(a) Degree from a recognised University.

(b) Diploma in film/video editing from a recognised institute.

(c) At least two years' experience in video-film editing.

Desirable

Experience of working with A/B roll U-matic editing systems.

Age Limit : 35 years

10. Junior Graphic Artists

Scale of Pay : Rs. 1640-60-2600-EB-75-2900 (Revised)

Qualifications & Experience

(a) Degree from a recognised University.

(b) Degree/Diploma in Fine Arts/Commercial Arts/Graphics/Design/Animation from a recognised University or institution.

(c) Three years' experience in production of Graphics for television/film/advertising agency.

Age Limit : 30 years.

11. Floor Manager

Scale of Pay : Rs. 1640-60-2600-EB-75-2900 (Revised)

Qualifications & Experience

(a) Degree from a recognised University.

(b) Diploma in stage craft from a recognised institution.

(c) Three years' experience of floor management in television/film/stage.

Age Limit : 30 years.

12. Set Designer

Scale of Pay : Rs. 1640-60-2600-EB-75-2900 (Revised)

Qualifications & Experience

(a) Degree from a recognised University.

(b) Diploma in stage craft from a recognised institution.

(c) Three years' experience in set design for television/film/stage.

Age Limit : 39 years.

13. Research Assistant

Scale of Pay : Rs. 1640-60-2600-EB-75-2900 (Revised)

Qualifications & Experience

(a) Master's Degree from a recognised University preferably in Mass Communication/Instructional Technology/Distance Education/Journalism.

(b) At least three years' experience in the field of formative/summative/process/feedback research.

14. Library Assistant

Scale of Pay : Rs. 1640-60-2600-EB-75-2900 (Revised)

Qualifications & Experience

(a) Master's Degree from a University.

(b) Minimum one year's experience in processing, maintaining coding, labelling and distribution of educational audio and video cassettes.

Persons working in Communication Libraries would be preferred.

Age Limit : 30 years.

15. Make-up Assistant

Scale of Pay : Rs. 1400-40-1800-EB-50-2300 (Revised)

Qualifications & Experience

(a) SSC passed.

(b) Diploma or Certificate from a recognised institution with specialisation in make-up.

OR

(c) Three years' practical experience in make-up for television/film/stage.

Age Limit : 30 years.

16. Store Keeper (Technical)

Scale of Pay : Rs. 1400-40-1800-EB-50-2300 (Revised)

Qualifications & Experience

(a) Diploma in Electrical Engineering/Electronics from a recognised institution.

(b) At least two years' experience in procurement of electronic items and maintenance of technical stores in a reputed organisation.

Desirable

Knowledge of import procedures.

Age Limit : 30 years

17. Deputy Registrars

Scale of Pay : Rs. 1200-50-1300-60-1900 (To be revised)

Qualifications & Experience

(a) Eight years' experience as Lecturer in a college or a University with experience in educational administration.

OR

(b) Comparable qualifications in research establishment and other institutions of higher education.

OR

(c) At least a Master's degree with ten years of experience of University Administration.

Desirable

Experience in areas such as purchase and stores, recruitment and establishment matters, governance of Universities, registration (admission) and examination (evaluation) and general administration of Universities.

18. Assistant Registrars

Scale of Pay : Rs. 700-40-1100-50-1600 (To be revised)

Qualifications & Experience

(a) Good academic record with at least Second Class Master's Degree in (C in the Seven point scale) and at least three years' experience in educational administration.

OR

(b) At least a Second Class Graduate with five years of experience of University Administration.

Desirable

Experience in areas such as recruitment and establishment, purchase and stores, governance of the University, registration and evaluation, estate management, general administration, expertise in procurement, storage, distribution and documentation of stores and materials.

19. Junior Stores Officer

Scale of Pay : Rs. 2000-60-2300-EB-75-3200-100-3500 (Revised)

Job Requirements

The job involves storage, holding, accounting and documentation of educational material including preservation of such material and supervision over the functions of Store Keepers and the documents maintained by them.

Qualifications & Experience

(a) Degree from a recognised University

(b) Proficiency in English and Hindi.

(c) Should possess technical knowledge on store preservation.

(d) At least ten years' experience in store holding.

(e) Adequate knowledge of fire-fighting and fire prevention measures.

Age Limit : 40 years.

20. Store Keepers

Scale of Pay : Rs. 1200-30-1560-EB-40-2040 (Revised)

Job Requirements

The job involves both theoretical and practical knowledge in storage, receipt, issue and accounting of all educational material held in the warehouse.

Qualifications & Experience

(a) Degree from a recognised University.

(b) Proficiency in English and Hindi.

(c) At least five years' experience in receipt, issue, accounting and documentation of stores.

(d) Should possess knowledge and expertise in stores preservation and in fire-fighting and fire prevention measures.

Age Limit : 30 years.

General Conditions

(i) Candidates called for interview from outside Delhi would be paid single second class railway fare to and fro Delhi by the shortest route from their place of residence/work.

(ii) 15% of the total number of vacancies are reserved for SC candidates and 7½ per cent for ST candidates respectively.

(iii) Age relaxable by five years for SC/ST candidates.

(iv) Persons working in Government/University/Public Undertaking should send their applications through proper channel.

How to Apply

Applications on foolscap sheets of paper neatly typed or handwritten giving complete bio-data, the format of which is given below, alongwith attested copies of educational/technical qualifications, experience, etc., should be addressed to the Registrar, Indira Gandhi National Open University, YMCA Cultural Centre, 1, Jai Singh Road, New Delhi-110001 and should reach latest by **16 November, 1987**. A recent passport size photograph, duly signed by the candidate, must be affixed at the right hand corner of the application.

Post applied for ....
Scale of Pay ....
Advertisement No. & Date ....
1. Name ....
2. Father's Name ....
3. Date of Birth & Age ....
4. Permanent Address ....
5. Address for Communication ....
....
6. Whether Belonging to SC/ST/Ex-Servicemen ....
7. Educational Qualifications ....
....

PHOTO-
GRAPH

Examination Passed	University	Institution	Subjects	Division	Percentage of Marks	Year of Passing

8. Professional/Technical Qualifications

Examination Passed	University	Institution	Subjects	Division	Percentage of Marks	Year of Passing

9. Details of Training, if any ....

10. Experience ....
Name & Address of Employer (s) ....

Period of Employment (From—To) ....

Basic Pay, Pay-Scale & Total Emoluments Per Month ....

11. Designation and Nature of Duties (in brief) ....
....

12. Any other information.................................

13. Signatute of the Applicant ....

In case, an applicant wishes to apply for more than one post, separate application for each post should be sent. Canvassing of any sort would disqualify candidature.

PLEASE SUPERSCRIBE THE NAME OF THE POST AND POST NUMBER ON THE TOP OF THE ENVELOPE AS WELL AS ON THE APPLICATION. Incomplete and illegible applications are liable to be rejected.

Note

1. The University reserves the right to restrict the number of candidates to be called for the interview.
2. It would be open to the University to consider the names of suitable candidates, who may not have applied. Relaxation of age and any of the qualifications may be made in exceptional cases in respect of all the posts on the recommendation of the Selection Committee.
3. The University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.

REGISTRAR

Advertisement No. 4/Admn./1987

PUNJABI UNIVERSITY
PATIALA

Advt. No. 55/PRO/Rect. October, 1987

Applications are invited for the following posts so as to reach the Registrar, Punjabi University, Patiala on or before **14.11.87**.

1. **Professor in Physics :** One

Grade : Rs. 1500-60-1800-100-2000-125/2-2500 (UGC)

Specialization : Electronics/Materials Science/Optics.

2. **Lecturers :** Four in the Deptt. of Physics and one each in the Deptts, of Journalism & Mass Communication and Correspondence Courses in the subject of Economics.

Grade : Rs. 700-40-1100-50-1600(UGC)

Specializations

Lect. in Physics : For Ist Post :

The candidate should have first or High Second Class M.E.M. Tech degree in Electronics. Preference will be given to candidates having post-graduate teaching experience and experience in the field of Television.

For 2nd post: Solid State Physics (Theoretical)

For 3rd post: Nuclear Physics (Theoretical)

For 4th post: Electronics/Computer Science.

Lecturer in Economics (C.C.) Political Economy of Development.

3. **Medical Officer** (University Health Centre): One

Grade: Rs. 940-30-1000-40-1200/50-1400/60-1700-75-1850+NPA as per Govt. rules subject to the condition that pay+NPA does not exceed Rs. 2300/- p.m.

4. **University Research Scholarships**

(One each in the Departments of Sanskrit & Pali, History, Sociology & Social Anthropology, Defence Studies, Business Management, Statistics, Mathematics and Journalism & Mass Communication). @ Rs. 800/- p.m. fixed for two years in the first instance.

Age Limit: Preferably below 30 years (40 years for women candidate)

Note

1. Candidates who have already applied for the post of Professor and Lecturers in Physics, NEED NOT APPLY AGAIN.

2. For the post of Professor, the Vice-Chancellor could place before the Selection Committee names of suitable persons for consideration alongwith the applications received in response to the advertisement.

3. It is not obligatory to call for Interview every candidate who possess the essential qualifications.

4. The number of vacancies may change.

5. Candidate must possess working knowledge of Punjabi.

6. The Selection Committee might relax the qualifications experience in exceptional cases.

7. The qualifications for the posts of Professor, Reader and Lecturer will be as laid down by the U.G.C. and details will be supplied alongwith the application form.

APPLICATION FORMS can be obtained from the Head of our Publication Bureau, on payment of Rs. 5/- at the counter OR by sending IPO for Rs. 5/- in favour of the Registrar, alongwith self-addressed envelope of the size 25×10 cms. with postage worth Rs 3.40, superscribing on it APPLICATION FORM FOR THE POST OF.

REGISTRAR

NATIONAL GEOPHYSICAL RESEARCH INSTITUTE

(COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH)

HYDERABAD—500 007

Advertisement No. 2/87

Applications are invited for the following posts in the National Geophysical Research Institute, Hyderabad-500 007.

(Abbreviations used : EQ—Essential Qualifications; JR—Job Requirement; FE—Field of Experience; and RS—Relevant subject).

I. Scientist 'EI' (Gr. IV(3) (Rs. 3700-125-4700-150-5000) OR Scientist 'EII' (Gr.IV(4) (Rs. 4500-150-5700) : 2 posts. (Post No. 1) (1 post) :

(EQ) : (a) First Class Master's Degree in Physics/Mathematics/Statistics/Computer Science or a First Class B.E./B.Tech in Electronics and Communication Engineering/Computer Science, with 12 years' experience. Duration of experience relaxable in case of exceptionally qualified candidates.

OR

(b) M.E./M.Tech. or Ph.D. in any of the above disciplines, with original work as evidenced by publications, with 10 years' experience. Of the total experience, at least 3 years should be related to the management of a multiuser computer facility.

(JR) : This is a position of leadership requiring capability to guide an operation and maintenance group to provide efficient professional support to the management of a mainframe computer centre. The incumbent will have to monitor the performance of the system, and interact with the system software personnel, maintenance agency and the user scientists.

(Post No. 2) (1 Post)

(EQ) : First class Master's Degree in Geophysics/Geology/Physics / Chemistry with 12 years' experience in Mineral Physics

OR

M.Tech/Ph.D. in any of the above disciplines with 10 years' experience in Mineral Physics.

Original work as evidenced by publications and patents.

(JR) : Ability to generate, Plan and Organise Researches towards the study of Equations-of-State and other Physico-Chemical Characteristics of Minerals in the earth's interior using modern approaches and analytical techniques.

II. Scientist 'B' (Gr. IV(1) (Rs. 2200-75-2800-EB-100-4000) OR Scientist 'C' (Gr. IV(2) (Rs. 3000-100-3500-125-4500). 5 Posts : (One post reserved for SC Post No. 5)

(EQ) : For Scientist Gr. IV(1) : First Class Master's Degree **OR** First class B.E./B.Tech. or M.E./M.Tech./Ph.D. (Science) in the indicated discipline.

For Scientist Gr. IV(2) : Educational Qualifications as for Scientist Group IV(1) above, but with experience, in indicated field, of atleast 6 years after **Master's Degree, 4 years after** Tech./M.E., **or** 2 years after Ph.D.

(Post No. 1) : Discipline : Physics/Mathematics/Statistics/Computer Science/Electrical/Communication Engineering.

(F.E.) : Geodetic computation and data processing **or** Astronomical Radio Interferometry or Signal Processing for enhancement of Signal/Noise ratio and detection of signal buried in noise.

(J.R.) : Correlation processing of radio interferometric data, Geodetic computations using astronomical and terrestrial data and estimation of relative movement between different stations by using Very Long Base Line Interferometry (VLBI).

(Post No. 2) : Discipline : Geophysics/Physics / Mathematics / Statistics / Computer Science/Electrical/Communication Engineering.

(F.E.) : Development and use of System Utilities and Software libraries in a Computer System.

(JR) : Supporting the management of System Software facilities of a mainframe computer and development of special purpose system software facilities.

(Post No. 3) : Discipline : Electronics/Communication Engineering/Computer Science/Instrumentation.

(F.E.) : Familiarity with digital and analong data acquisition apparatus, interfacing digital equipment for data transfers, and/or field Geophysical instruments.

(JR) : Operation and maintenance of airborne/ground electronic instruments, electronic navigation aids, etc. Duties will include in flight operation of instruments during surveys whenever required.

(Post No. 4) : Discipline : Electrical Engineering.

(F.E.) : Operation of electrical power supply and support system involving generators, uninterruptible power supply, air conditioners, etc.

(JR) : Maintenance and monitoring of an electrical support system for continuous, uninterrupted operation of a mainframe computer system; interaction with operation and maintenance personnel.

(Post No. 5) (Reserved for S.C.)

Discipline : Electronics/Communication Engineering/Computer Science.

(F.E.) : Work with digital data acquisition system, radio telemetry and/or digital seismological observatory apparatus and experience of independently running and maintaining such system.

(JR) : Running and maintenance of a digital seismic telemetry system. Posting will normally be at seismic field station, away from headquarters.

III. Technical Assistant Group III(2) (Rs. 1640-60-2600-EB-75-2900) : (5 Posts); (Two Posts Reserved for SC and One Post reserved for ST candidates);

Post Nos. 2 and 3 Reserved for SC.

Post No. 4 Reserved for ST.

(EQ) : Bachelor's Degree in Science. **OR** Three-year Engineering Diploma in relevant subject or equivalent. 3 to 5 years' experience in relevant field. **OR** M.Sc./B.E./B.Tech. or equivalent in relevant subject.

(Post No. 1) : R.S. : Physics/Mathematics / Geophysics / Electronics / Communication Engineering.

(F.E.) : Operation and maintenance of Seismological Observatory apparatus.

(JR) : Operation and maintenance of Seismological Stations in remote areas in the Northeastern region of India where the incumbents will be posted. Preparation and processing of data collected at these stations.

(Post No. 2) R.S. : (Reserved for SC) Refrigeration/Air conditioning/Electrical Engineering.

(F.E.) : Repair & maintenance of airconditioners and/or refrigerators.

(JR) : Repair and maintenance of Airconditioners and refrigerators.

(Post No. 3) R. S. : (Reserved for SC) Horticulture/Agriculture (with horticulture as a subject of study).

(F.E.) : Planning and implementation of landscape development and horticulture. Use of modern manures, pesticides etc.

(JR) : Development of lawns, groves, flower beds and nursery in NGRI. Supervision of staff (mostly **Telugu** speaking), engaged in plant care and conservation, and development of various shade giving, fruitbearing and ornamental plants.

(Post No. 4) R.S. : (Reserved for ST) Dental Hygiene.

(F.E.) : Clinical work in connection with dental care.

(JR) : Attending to prophylacting work relating to dental hygiene, and other tasks entrusted by the doctors in the NGRI Dispensary.

(Post No. 5). R.S. : Physics/Mathematics/Geophysics.

(F.E.) : Geophysical data collection/processing. Computer-aided interpretation.

(JR) : Assistance in geophysical modelling and interpretation.

IV. Technical Assistant Group III(1) (Rs. 1400-40-1800-EB-50-2300) : 3 Posts. (Reserved for SC and ST candidates)

Post Nos. 1 and 2 Reserved for S.C.; Post No. 3 Reserved for ST.

(EQ) : Bachelor's Degree in Science. **OR** Three-year engineering Diploma in relevant subject or equivalent.

(Post No. 1). R.S.: (Reserved for SC) Mining Engineering (3 year-course)/ Blaster's Certificate of Competency issued by the Director General of Mine Safety, Government of India, Dhanbad, and Shot Firer's Permit.

(JR) : Loading of shot holes with high explosives, and blasting, as required for seismic exploration, using electrical detenators.

(Post No. 2). R.S.: (Reserved for SC) Mathematics/Physics.

(JR) : Assistance in running seismological observatory in some remote areas and analysis of records relating to earthquake data.

(Post No. 3). R.S.: (Reserved for ST) Mathematics/Physics.

(JR) : Assistance in running the geomagnetic observatory of NGRI, preparation of the records, and computer processing of data.

GENERAL CONDITIONS

1. Number of posts in some categories mentioned above may increase by the time, the selections are made.

2. The above posts except Gr. IV are temporary and likely to continue. All the posts including Gr. IV carry allowances as admissible under the Central Covernment Rules.

3. Appointment against all the posts of Scientists, Group IV, will be on contract for a period of six years (including two years probation) in the first instance, except for CSIR employees already confirmed against lower posts. The posts of Technical Assistant, falling under Group III, are pensionable subject to Rules and Regulations in force under C.S.I.R.

4. A lower standard of suitability consistent with efficiency will be applied in respect of SC/ST candidates.

5. Candidates with Engineering qualifications, if so required, are liable to serve in any defence service or post connected with Defence of India for a period of not less than four years, including the period spent on training. if any, provided that such persons (a) shall not be required to serve on the above said post after the expiry of the 10 years from the date of appointment and (b) shall not be ordinarily required to serve as aforesaid after attaining the age of 45 years.

6. Candidates belonging to SC/ST communities should invariably enclose an attested copy of Caste Certificate issued by the competent authority with their application, failing which they will not be entitled to the concessions otherwise admissible to them.

7. The prescribed application forms for the above posts may be obtained from the Administrative Officer, National Geophysical Research Institute, Uppal Road, Hyderabad-500007 (A.P.) by sending a requisition alongwith a self-addressed, stamped envelope (23 x 10 cm) affixing stamps worth Re. 1-50 ps. on or before **2-11-1987**.

8. Separate application is required to be submitted for each post, even if the posts applied for are from the same category or with the same qualifications, indicating clearly the Advertisement Number, Category Number and post Number (wherever prescribed) of the post applied for.

9. For all the posts reserved for SC/ST, General candidates may also apply. However, they will be considered if no suitable candidates are available from SC/ST community as the case may be.

10. Applications duly completed (supported by attested copies of all the certificates and testimonials) alongwith non-refundable fee of Rs. 8/- (Rupees Eight only) in the form of Crossed Indian Postal Order drawn in favour of the Director. National Geophysical Research Institute, Hyderabad-500007 (A.P.) should be sent so as to reach him on or before **24.11.1987**. The candidates from SC/ST community are exempted from payment of non-refundable fee.

11. Candidates called for interview for the above posts will be paid single second class shortest route rail fare to and fro from the actual place of undertaking the journey or from the normal place of residence of the candidate whichever is nearer to Secunderabad Railway Station on the production of relevant documents of travel.

12. Applications from employees working in Government Departments, Public Sector Organizations and Government-funded Research Agencies will be considered only if forwarded through proper channel and with a clear certficate that the applicant will be relieved within one month of receipt of the appointment orders.

13. Incomplete applications will be summarily rejected.

14. Persons applying for a higher post carrying higher scale of pay may be considered for a post carrying lower scale of pay if he is not suitable for the higher post.

15. Canvassing in any form and/or bringing if any influence, political or otherwise, will be treated as a disqualification for the post.

16. Applications received after the last date viz. **24-11-1987** will not be entertained. **Interim Enquiries will not be entertained.**

P. Raja Ram
Administrative Officer (GR. I)

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157

FD 5

University
News

MONDAY, NOVEMBER 2, 1987 Rs. 1.50

Festival of India in USSR

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UNIVERSITY NEWS

VOL. XXV NOVEMBER 2
No. 44 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor :
SUTINDER SINGH

Festival of India in USSR

Pages From My Diary

Supratik Mukherji*

Today as we sit back in our rooms and look out of the windows at the green trees of the college campus and the deserted lonely metalled roads, our minds suddenly go back to those magical days, those fifteen days that we spent at the Soviet Union. It was an experience, beyond compare, beyond anything that we ever expected and today we miss it, as we realise that it was all in the past and so very far away. Everything we saw there impressed us; the people, the houses, the hotels, the trains and just about anything under the sun. The people were so loving, so friendly that we never really felt as foreigners in another country. It was as if we were one of them eating together, dancing together, living together and touring over the Russian Republic. It all seems as a dream. Today we wonder if we would ever go back to the Soviet Union—the great nation with wonderful people, for whom we will always have a place in our hearts. In fact we had become so attached, that the last farewell was over-sentimental. Possibly we would never again see them and that is what added to our grief. We present here all of our experiences of this wonderful and memorable tour of the great nation—experiences without which our tour would have been just another common journey, but with which we today feel happy and reminiscent.

30th June : The feel of the Soviet Union began with the AEROFLOT SU-536 Airbus which we saw standing motionless in the Indira Gandhi Airport. Our Airport formalities were over and we were sitting in the spacious boarding hall of the airport. At 10.10 the public address system blared out its call for the passengers of SU-536 to board the plane. With a nervous smile on our faces and our handbags on our shoulders we walked through the boarding platform and stepped into Soviet comfort. A smiling air-hostess greeted us with ZDRASTUITI—'hello' in Russian.

At 10.30 we felt the vibrations of the engine and soon the purple lights of the runway became blurred as we gained speed. Then with a mighty heave we left the ground of our motherland on our mission of friendship and goodwill. Delhi was soon a dotted sparkling spectacle 15,000 feet below us and that too was gone as we gained height...to... 36,000 feet at 880 km/hr.

1st July : At 12.15 we touched Karachi International airport from which we flew to Tashkent for another four hours. We reached Tashkent at 4.15 IST or 2.00 a.m. Moscow time. After adjusting our watches we prepared ourselves for the final leg of the journey. At 8.15 Moscow time we touched the land of USSR which was to be our home for the next fifteen days.

At Moscow Airport we were greeted by a Youth Group of dancers carrying banners saying "Welcome to Youth Participants of Festival of India". Immaculately dressed pretty girls handed us rose bouquets and then pulled us to join the informal dance with the Russian group. It was all so friendly, so warm and so touching that all our inhibitions vanished and we began to enjoy our grand welcome. We were pleasantly surprised to find our Hon'ble Minister of Sports & Youth Affairs,

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Member, Bharathidasan University Contingent for the Festival of India in Russia.

Mrs. Margaret Alva there. Not only did she take part in the symbolic "bread and salt" welcome on behalf of all of us, but she also joined us in the dance.

Then we boarded the bus which took us to the 18-storey hotel—GOSTINICHA ORLANOK or Hotel ORLONOK and what a ride it was—through bane highway flanked by lush green gardens, neatly laid streets, over Moscow River, beside the world famous Moscow University and then the heart of Moscow—HOTEL ORLONOK.

Our rooms were beyond description—it really was VIP treatment. After refreshing ourselves we went to the PECTOPAH—Russian for restaurant to have our lunch. The polished chairs, delicately woven furnishings, the glistening chandeliers, handsome waiters and beautiful waitresses plus of course the grand view of Moscow from the window really was breath taking. The food of course was fit for kings and it was to be so for the next fifteen days.

After lunch we went to Lenin Stadium for seeing the rehearsal of the opening ceremony. Our 4 interpreters Irina, Anya, Slava and Timur accompanied by two officials Anatoly and Sergei took us around the Stadium. After dinner, at 8.30 p.m. we went to the ground floor of the Hotel for the Indo-Soviet Youth Friendship Inauguration. Mrs Alva released a pair of pigeons and inaugurated the meet by cutting the ribbon. Then we gathered in the concert hall where we were treated to Russian dances, folk songs, group songs, ballet and, of course, heavy metal rock show. Then the revolving stage turned to the other side and there we had a regular discotheque ready for us with psychedelic lights, rotary lights and musical fountains. We joined the Russian Youth and danced with them almost an hour and a half. We received from them small souvenirs and cards and gave them some souvenirs in return. It was really a pity saying "DAS WOANVA" to them after the dance was over. We had made so many friends in that short span of 2 hours that when we went to sleep that night their names kept coming back—Helen, Vika, Rozy, Sveta, Igor, Mike, Zavor and so many more—some who knew English, others who didn't but, all of them our friends. We had a language of our own—it was the language of the youth, of smiles, of actions, of touch and of friendship.

We were really surprised about the Russian nights. The sunlight lingers on in the sky till about 11 p.m. and it starts getting brighter around 2 a.m. imagine going to sleep at 10 p.m. or even 11 p.m. when there is not a single street light burning.

2nd July: After the breakfast we went to the Kremlin for rehearsal of the opening ceremony of the Festival of India which Premier Rajiv Gandhi and General Secretary Comrade Mikhail Gorbachov were to inaugurate the next day.

The Kremlin was like something we had never seen before. It is the seat of the CPSU of the Russian Republic and the capital of the Soviet Union. It had the historic cannon, the famous statue of Lenin Leading the Revolution, the Kremlin Hall, the preserved body of Lenin, the Jewish churches with its fine architecture and of course the broken bell which is 4 metre high. We met a group of Soviet youth who had come from each Republic of the Soviet Union, to take part in the inauguration. We rehearsed for the big event and returned to Orlonok. That night we had another session of grand disco dancing. One girl taught us a Chzechoslovak dance, her name was Anushka and yet another student of the Moscow University taught us some break-dancing, his name was Igor.

3rd July: The day of the inauguration. We were in our costumes with the Rajasthani turban. We went to Kremlin and positioned ourselves along the red carpet with our flower-plates waiting for the chief guests to arrive. Exactly at 4.30 the two great leaders arrived with their wives and the slow march began. We showered rose petals as they walked past us. It was a fantastic feeling to watch Rajiv Gandhi, our dynamic Prime Minister, and equally dynamic and handsome Mikhail Gorbachov and their wives from so close. Then the other functions began which included the 'bread and salt' ceremony, the 'Kumbha' ceremony, a speech each by the two heads of governments, ceremonial dance and the planting of trees by the two leaders.

After the inauguration, we went to the Moscow River, where we joined the other members of the Bharathidasan University Singing Troupe. We boarded our barge—The Moskva—250 and thus began our barge-ride up the Moscow River. The barge was decorated true to Indian tradition with baloons, festoons, banners, and mango leaves. On either side of Moscow river, the population of the city had gathered in huge numbers to cheer us. Some of them even moved along with us, we in the barge, they on the road. We never knew their names or even how they looked, but across the waters we established the bridge of friendship. We performed on the barges, loudly cheered by the Moscovites on either side of the River Moscow. We finally disembarked at the Lenin

Stadium jetty where we were given a rousing reception. The crowd embraced us, kissed us and some of them even gave us their personal belongings to keep as souvenirs—bangles, watches, caps, badges, cards, books, bouquets.

We wached the evening programme's proceedings in our rooms on television.

4th July : We were given our allowance money of 75 roubles each and taken to the Kremlin Hall, where we met the leading personalities of the Soviet Union, like Malyshew, one of Rakesh Sharma's companions in the Indo-Soviet Space venture, Mr. P.V. Narasimha Rao and Mrs. Margaret Alva. After a grand lunch, we moved to the first floor, where some of us played on the piano. Russian youth who had gathered there immediately broke into a dance.

Then we were taken to Gorky Park. The most picturesque spot of Moscow. Here, amidst hundreds of Russian youth, who had prepared a very festive welcome for us, we were taken to the open air auditorium. We gave some interviews on television and Tass, the Soviet newspaper. Our performances were held in between those of the Russian youth. Thus the youth inauguration programme got over. As a fitting finale the Soviet Youth brought a big model of the globe which they carried on their shoulders and came down to the audience. We joined them in carrying the globe and all around everyone said MIR DRUZBA FESTIVAL—peace, friendship festival. The boat on Moskva River carried us to the bus which took us to Hotel Orlonok where we packed our suitcases and rushed for dinner. After dinner we went to the station to our train—MOLODGVAR DEETS which was to be our travelling home for the next ten days.

The train was like something which we could never imagine. It had air tight doors, carpeted flooring, sun mica walls, magazine closets, temperature indicators, smoke detectors sliding compartment doors, retractable tables, berths with mattress, quilt and pillows, 3 types of lights, radio, and of course a discotheque, a sport room, a video parlour, a movie hall, a conference room and saloon car—it was indeed like a palace on wheels. Scores of Moscovites had come to see us off at the station. Soon it was SPOCKNOI NOICH—good night, for them as Molodgvar deets snaked its way out of Moscow.

5th July : At 7.30 a.m. Mocow time we got down at Tula, the city famous for its SAMOVARS—or Russian tea kettles. The cold wind hardly dampened our enthusiasm as we found hundreds of Tulaites at the station to receive us. After the usual "bread and salt ceremony" and a speech by our leader the ever smiling Dr. R.K. Pande, we were taken to Hotel Mosckva for breakfast. Then we visited the world famous Tolstoy Farm. Tolstoy's house, which today is a national museum impressed us. Even today there stands the last pen with which Tolstoy wrote his last words. We saw the hen house which is of symbolic value in all of Tolstoy's work. We saw his grave, a simple hump of earth—a contact to the fame of the author of "War and Peace".

C.F.T.R.I

After lunch, we went to the Pioneer camp of Tula, a sort of holiday home for children between 7 to 15. We performed there, and later went around the camp. We saw the neatly laid out rooms, libraries, Lenin's room, and dining rooms. In the evening we gave our first official performance of four songs at the Central Park of Tola. Later, we joined the audience to watch Russian artists' performance. They comprised of a singing troupe "AVANTE", a puppet troupe called "METAMORPHOSIS" a magician named Satar and a dancing duo—Marina and Valodev. Here we met some girls who spoke to us in Hindi. We were really touched to hear the language of our motherland, 10,000 kilometers away from home. The last song of the evening was "we shall overcome" in which we joined the Russians on stage. We received a touching farewell at the station—Tula, was wonderful.

6th July : We got up at six to a warm welcome at Oryd. After the usual ceremonies we went to Hotel Rossia. After freshening up we boarded the intourist bus go to the various tourist spots. We went to the Lenin square and placed flowers at the monument. We saw the Victory square and the change of guard at the monument. This monument is dedicated to the soldiers who lost their lives in the Second World War and even till today young boys and girls stand guard in uniform carrying guns used in the war. The guard changes after twenty minutes and a new pair takes over. Just beside this monument is the building which was left unharmed during the war and except for that the whole town was destroyed. And yet today if you go there, there is not a sign of destruction anywhere. Then we went to the monument of the great writer, N.S. Leskovy around which are carved some of his famous characters. From here we went to the war museum where we saw most of those instruments. and artillery and ammunition used during the second world war. Here we saw a unique piece of three dimensional art which depicted a scene of the war.

Part of the picture was painting while the other part was the actual thing in itself, all made so beautifully that you could hardly make out where the wall surface began.

After some shopping we had lunch and then we went to the kindergarden of a Computer factory. It is a boarding and lodging house for children below five with full facilities for sauna bath, gymnasium, traffic training park, medical centre equipped with latest instruments, swimming pool, etc. We also went round the computer factory. Then we went over to the Concert Hall, where we performed for the Oryolons. Metamorphosis and Avanti also performed and so did the dancing duo. Later, we had a grand discotheque where we sang popular Hindi disco numbers. Girls came to dance with us and soon we were all moving to the beat of the electric drums and brass guitars. It was a highly tired bunch of us that came back to the station that night—Oryol, we will miss you.

7th July: We got up at 8 a.m. and looked out at Stary Oskol. We were received by the Local Komsomol Secretary. We put up at Hotel Russ and after breakfast we went to the largest steel factory of Europe. Donning red helmets we went around.

After our tour of the factory, we performed in the concert hall and returned to the hotel. We went out for shopping and had a nice chat with some Russian shop-keepers who knew broken English. At 4 p.m. we left for a tractor factory called Staroskolski zavod autotroktogo. We received souvenirs and flowers and gave a performance at the factory auditorium. After dinner we walked down the lane to the open air theatre through a kilometre thick surging mass of humanity. We inched our way through the crowd who made way for us as best as they could. Our performance here was very well received. Our last song "we shall overcome" moved the whole crowd who joined us and cheered us all along. It was sad leaving the place, people whom we had not even got a chance to speak, just smile and make friends. While we were about to enter the bus, one boy broke through the security and ran up to us and gave us some badges "ETA TOI SOUVENEER". This is your souvenir, he said. We all kissed him and embraced him, until it was time to leave. At least, half the crowd or more had turned up at the station to see us off. Some embraced us, others kissed us while some lovingly wiped the tears off our eyes. We reluctantly got into the train and soon Stary Oskol was behind us—Stary Oskol you were beautiful.

At night we had a disco session with the Russian youth participants who were travelling with us. We acquainted ourselves with them and exchanged addresses. After a long time when we all felt sleepy, we came back to our compartments.

8th July : This morning saw us at Voronezh. After breakfast, we went around the Hotel, which was situated just at the edge of a high cliff. Down below was a natural pond where many people had come for a swim. After lunch, we went for a tour of the city. We saw the Lenin Square and the Tomb of the Eternal Fire where we saw the change of guard. Later, we saw the famous Vonozezh Marionette Theatre. This theatre built after the war is made into three storeys, the top of which has a fully artificial garden with ponds, rock gardens, shurbs and plants. A bird cage of cylindrical construction penetrated the floors and extended from the ground right to the top. Besides the walls had paintings depicting Russian folk life and the main door to the theatre had painted China plates each from a different part of Russia. After this, we went to the kindergarden hospital where we were taken by surprise at the fantastic facilities provided for the little ones. There were optical centres, sauna bath, swimming pools, therapeutic centre, gym, dance hall, all equipped with modern instruments including laser optic technology. After dinner, we went to the concert hall. The cultural programme we put up jointly with the Russian artists attracted a big receptive crowd. We remember an old man who was dancing to every tune that we sang.

Our bus brought us to the overcrowded station—the parting was memorable. So many of us got carried away and the Vorozehites bade us a fond farewell—Voronezh it's hard to say goodbye to you.

That night we exchanged our traditional costumes with the Russians and what a sight we all were. The merry making continued till midnight.

9th July : At 8.30 the train stopped at Tambov a city which is not only famous for its role in the Great War but also one of the oldest of the Republics of Russia, it is 350 years old. After the usual ceremonies we went to "HOTEL". After breakfast at a nearby restaurant we went for sight seeing around the city. We saw the Lenin's monument, the River Snach beside which was a beautiful park and the Pushkin monument. Then we went to the Ovnastaya Kartinnaya Gallery where we saw some of the finest paintings of Russian Drama and copies of Madonna series. Besides, there were works of distinguished Russian painters and sculptures like Kanin, Ostnyakin Krasnov, Semenov and many others. After lunch, we went to a chemical factory that manufactures thread, resins, fabrics, plastic and vinyl products. We were very impressed by the electronic control room where you just had to press a button to operate anything anywhere in the whole plant. We also saw the adjoining fish farm, where we enthusiastically fed the fish and even caught two of them for fun. Then we were split into groups of four for a visit to a Russian family. A speedy volga car fitted with all modern amenities carried us to the house of Vladimir and Olga. For the next two hours we enjoyed the company of this young couple who were so accommodating and so friendly. Vladimir is an official in the Komsomol organisation and Olga is a medical student. Both love to sing and play the guitar. Their son, the two year old Dmitri and Vladimir's mother made good friends with us and asked us so many things about our country and our culture. They had prepared a grand dinner for us which included a full steam cooked fish, stuffed capsicum beef and other delicacies. After a round of photography and pleasantaries we left for our evening function. Vladimir and Olga came to hear us perform in the concert hall. We were greeted by a huge crowd at the station that had come with small Indian flags and souvenirs to bid us fare-well. Vladimir was also there and he walked along the platform until the train had gathered enough speed—Tambov were so close to us.

10th July : Our next stop was Penza and sure enough there was the enthusiastic crowd waiting for us at the station at 8.30 a.m. We went to Hotel Lastochka and freshened up for the day. Later, we went to see the Martyr's Tomb and the eternal flame, the Karl Marx square, the victory monument and other monuments. The victory monument was on a large piece of land elevated by steps leading to the central statue of a mother holding a child and protected by an armed soldier. Here we saw the change of guard. Just behind the monument in an enclosure was a book on which was written in gold, the names of those soldiers killed in the war. Then we went to a museum which is the best wooden house of Penza. It is completely made of wood and is a unique piece of architecture. It is called Mozei Narodnogo Tverchestva. This has got beautiful pieces of wood and glass crafts many of them unbelievably realistic. Our next stop was at Ulyanovsk's office. Ulyanovsk was Lenin's father and he held the post of assistant professor when he used that office. There are some of his personal items preserved even today. There we gave a Television interview following which we returned for lunch. After lunch, the hotel band stepped down and invited us to play a song. The Hindi song soon had the assembled Russians swinging in rythm. Soon we went to the Labour Camp of Penza. This is a boarding and lodging camp for children studying in high school upto pre-university, where they help the farmers in the fields. There we sang and danced with the students, most of whom knew English. It was hard to say goodbye to them two hours later. After dinner, we went to cultural centre where we performed to a large audience. Here we were present-

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ed with our photographs taken during the day after which we joined our Russian train-mates for "We shall overcome". We left the auditorium with fond memories of the function and laden with the many gifts we got made our way back to the train. A large crowd had collected there to bid us farewell. Our train left Penza early, leaving our goodbye half said and soon we were streaking through the dark Russian night—Penza we'll miss you.

11th July : We found ourselves at Tolyatti station at 8.00 a.m. Hardly did we cross the station after the welcome formalities were over, that we found ourselves in front of the Volga Power Station, which is situated across the river Volga and comprises more than a dozen turbines operating under a water level of 20 metres. This is one of the largest power stations of the Volga river. Tolyatti, our guide told us, was a very young city, about 25 years old. Its main centre is the LADA factory called the USSR Volga Automobile Works, one of the world's largest car factories incorporating 880 km of conveyor belt with each line of 2 km and having a work force of 2 million producing more than four thousand cars a day. We saw the cars in semi-assembled condition slowly moving along the assembly line till the finish. We were later informed that only VIPs and Ministers are allowed inside—we naturally felt elated at this gesture. We performed at the factory auditorium after which we went to hotel "Autovaz" for lunch. After lunch we were taken to the beach and here we wasted no time in getting ready for a swim in the River Volga.

After an enjoyable swim, we went to the YOUTH PALACE, a fantastic structure looking exactly like a ship. The inside was divided into 3 compartments housing a discotheque, a longue and a snacks restaurant. Here we made friends with many young Russians and soon we were all dancing in the discotheque. Leter, we walked down the keel of the ship by a flight of steps into the stage and presented. English, Indian as well as Russian songs.

After dinner at Autovaz we came back to the YOUTH PALACE for the finale "We shall overcome" with AVANTE. Soon the joyful and enthusiastic Tolyattians were left behind and we sat brooding over the day's events—Tolyatti you were charming.

12th July : "METAMORPHOSIS", the marionette group travelling with us, were very happy this morning because we were entering their city—Saratov. At 8.30 a.m. we reached Saratov. Hand in hand with our Metamorphosis friends we got down to a memorable reception. We stayed at hotel Volga, situated in the beautiful S.M. Kirov Avenue which was restricted to pedestrians only. The place looked like a fairyland, with ice cream parlours and beautifully decorated seats and roadside cafes. Right across the entrance was a banner saying "Welcome to Saratov, youth of festival of India in USSR". After breakfast we went shopping and bought the famous Saratov wall clock as a souvenir of this wonderful city. We went to the Lenin Square and laid flowers. We were then taken to the River Volga Boat station where we crossed the famous automobile bridge over the river which is 3 km long and crosses over a beach in the middle of the river. It was a beautiful sight, the blue and clear volga and in the middle the yellow patch of sand dotted with hundreds of sunbathers. We came back for lunch and later left for a small Russian village called Generalskoiya. We were wonder-struck at the high standard of living in this village. Neatly laid roads at right angles to each other, beautifully kept parks, street lights, painted houses and every house fitted with ultra modern amenities like room heater, kitchen grilette, fridge, not to mention some houses with cars in garages. It was here that we gave a lengthy 30 minutes interview for the Saratov radio. Here the Volga was just like a marshy canal. Later after dinner at the hotel, we proceeded to the Concert Hall for our performance. Our five songs were very well received. Saratov television gave us wide coverage and it was to a very emotional crowd that we bade farewell that night. Saratov, lovely Saratov, we will "PUCCA"—see you again. We had a meeting in the train with "Metamorphosis" because it was to be the last night together with them. As the night prolonged we became more and more emotional, holding hands, weeping profusely and hardly did not say a word—each moment was precious. Around midnight we assembled in the canteen to celebrate Alexei's birthday.

13th July : It was midnight and all of us with tears of joy wished Alexei a happy birthday. We had a grand tea party, sang and danced to the tunes of AVANTE. It was such a homely, close affair, so touching, so full of warmth. It was only in the early hours of the morning that we went to sleep.

We were woken up by the bearded Markella who was the leader of Metamorphosis. He drew the curtains and there, outside, was the world's tallest statue looking down on us. Standing over 90 metres including the tip of the sword, this marvellous statue of a lady calling her men from behind and leading the path with her sword held high really had us gaping at it in wonder. Soon the train entered Volgograd station. It was 7.30 a.m. when we checked in hotel Ioznaya. Here we met four Indians who were studying engineering, two from Jammu and two from Tamilnadu — we were so happy to see them. Manavalan and his friend accompanied us to the Martyr's tomb. After seeing the change of guard, we went to the Army Museum, one of the finest collection of World War II remanants, anywhere in the world. Beginning with anti-aircraft guns, missile launches, guns, uniforms badges, action photographs, the museum also had a display of tanks and aircrafts used in the war. Here at the top we saw a circular painting on the walls, which was 9 metres high and 200 metres in circumfrence. This painting depicted scenes of the war, partly in 3 dimension and partly in two dimension. Just behind the museum was a building which was destroyed in the war. It is kept as it is even today—in ruins, but a preserved testimonial to the bitter memory of the war.

Later after lunch we went to see the statue of Motherland. What impressed us most was the serenity of the place and, of course, the beautiful statues all around depicting the story of the war. Just below the hill in 9 cavern burns an eternal fire held by a huge forearm. On the walls are engraved the names of each and every soldier who died in the war. From one end to the other is a gradually rising circular ramp that leads to the road going to the top of the hill at the foot of the statue of Motherland. We returned to the hotel for dinner and then went to the Volga River Steamship jetty. The receptive Russian crowd immediately made us feel at home. We had a long ride in the boat, during which we sang and danced with the Volgogradians. Our songs especially "Atta Uttavu" was greeted with a loud applause. Here we met Sveta who was to be our train-mate for the last few hours. She was a break dancer. We returned to the station with a heavy heart because our trip was almost over. Tearfully we bade farewell to the people of Volgograd and to some of the puppet team members and Satar. Rest of the "Metamorphosis" travelled with us right upto Moscow. The night was spent in merrymaking in the train.

14th July : The full day was spent with the Russians, having seminars and question answer sessions, both on Indian and Soviet life. They taught us puppet dancing, break dancing and how to play Russian Ludo and sing Russian songs. Towards the evening all our ethusiasm came to an end as we got into groups with the Russian and clinging to each other we sat together in their compartments, because the voyage was about to end. That night we mustered up all our energies to have one last dance with our Russian friends. The discotheque in the train reverberated to the sound of happy, yet tearful, friendship. And in this manner we entered Moscow station at 11 p.m. We bade a tearful farewell to the crew of Molodgvar Deets who had taken care of us so well. I remember Olga, Larisa, Kate and of course the Chief Sevgei who came a long way to see us off. We made the slow march back to Orlonok.

15th July : Early in the morning we joined the puppeteers and our interpreters and with them we went for shopping. Later, we saw the famous Metro of Moscow. The stations were much more like palaces, with chandeliers and fountains and of course the fantastic trains travelling at 200 km/hr. We returned to the hotel to have lunch.

Finally, when we boarded the bus we all cried out a loud final goodbye—DASVIDANYA METAMORPHOSIS, goodbye metamorphosis.

All the way to the airport we felt a strange hollow within ourselves, slowly making us realise the unbearable truth that we were about to leave Moscow, about to leave Russia, about to leave our friends in Saratov and the thousands of friends we had made in this great country — the SOVIET UNION.

NOTES

(1) Bread and Salt Ceremony: A traditional welcome ceremony in Russia. This comprises a piece of bread, about one foot in diameter and five inches high, with beautiful decorations on it. In the middle is a small cup of china which has salt. This bread would be carried on top of a piece of cloth to the guest who would take out a piece of bread, apply some salt to it and then eat it.

(2) Komsomol : Young Communistic League of Russia that has almost 90% of the Russian youth as its members. It is from the Komsomols, that the Communist Party selects its members depending on the qualification and the service record of the individual.

3. Pioneer and Labour Camp : Children upto the age of fifteen spend their summer holidays at pioneer camps where homekeeping and other arts and crafts are taught to them. They stay in log cabins which have beautifully decorated interiors and have all modern facilities. They have libraries, trophy room, Lenin's rooms, central dining halls, chicken and rabbit houses, parks and gardens, all of which they themselves take care of. Besides this young pioneers are taught to speak in English and are acquainted with the various countries of the world and their culture.

During the summer, the children of the older age group go to Labour camps, where they help the farmers in cultivating the land and sowing the seeds. And when the harvest time comes, they help in harvesting the crop. Labour Camps are thus like agricultural schools where boys and girls are taught about the various crops and their cultivation.

4. Lenin Square : Every city has a Lenin Square that comprised of a huge piece of cemented absolutely raised dais in the centre. In some squares there were rows of flower beds just beside the dais. In the centre of the dais was a high rectangular block on which was mounted the statue of Vladimir Iliych Lenin, the leader of the Revolution.

Moscow — An Intimate Portrait

R.K. Pandey*

The three stage Festival of India in U.S.S.R. at Moscow, Leningrad and Tashkent inaugurated by Shri Rajiv Gandhi, Prime Minister of India at Moscow on 3rd July '87 was an outstanding event in the friendship of India and USSR. Festivals of Indian culture in foreign countries have already been held. But this festival has surpassed them all. The organisers have done their best to ensure that the friendly Soviet people are given every opportunity to get to know the history and culture of both the countries. The youths of India have visited USSR and USSR youths will visit India.

The Festival of India in USSR, popularly known as youth programme, has been held at three stages—the first from 1st July '87 to 15th July '87 at Moscow, the second from 16th July '87 to 31st July '87 at Leningrad, and the third at Tashkent from 2nd September to 17th September '87. More than 500 youths of India have moved in the different parts of USSR and now know so many things about Soviet culture, economy, political systems, etc. I participated in the first stage i.e. the main opening of the festival on 3rd July at Moscow. The objective of this article is to record some of the impressions about MOSCOW and its citizens.

Indo-Soviet Friendship

Indo-Soviet friendship is very old. During the course of our visit it was revealed that a brave Russian Traveller-Afanasy Nikitin, made a journey to far-off India in 15th century. In the 19th century, the talented Russian actor and producer Gerasim Levedev helped the Ganguli Theatre in Calcutta acquire firm professional roots. More recently, the Russian born painter Svyataslav Roerich, married to the Indian actress Devika Rani, has been equally honoured and respected both in his country of birth and in India, his country of adoption. His father Nikolai Roerich a famous painter and educationist lived in India for many years. Now many Indians are studying in USSR and USSR youth are working in India.

But the best thing about the Indian Festival is that the youths of India have travelled to every nook and corner of the USSR, the largest country of the world. Its territory is about 22.4 million square kilometres. The distance from the eastern to the western borders of the USSR is more than 9,000 kms. and from northern to the southern borders more than 4,500 kms. Our group covered the main Russian Soviet Federated Socialist Republics (R.S.F.S.R.). This Republic is called the heart of USSR and the main revolutionary area. We covered Moscow, Tula, Orel, Stari Oskol, Voronezh, Tambor, Penza, Talayatti, Saratov and Volgagrad.

Moscow

Moscow stands at the centre of the great Russian plain. All the time our six interpreters were guiding us and telling about the great city. I saw the city in the first rising light of the sun at 11.30 a.m. on 1st July '87. The city is not very old as many of our Indian cities are. I asked my Indian youths not to exclaim on anything but we could not maintain silence to see the sky touching magnificent buildings. The first thing that struck our eyes was its grandure. Trees have been planted all along the pavements. There are many broad avenues and squares in MOSCOW full of flowers, fruit vendors, ice-cream sellers. The Muscovites were surrounding the ice-cream Kiosks. I was told by the interpreter Muscovites really enjoy their ice-cream even in midwinter when the arctic cold holds the city in its icy grip.

MOSCOW offers a feast to the eyes and our young boys and girls were curious enough to see it closely. We travelled in a luxury bus at an easy pace through the oddly silent streets between the tall buildings which line the new suburbs of MOSCOW. The streets themselves were perhaps the most pleasing feature of the city. The streets were unusually wide and straight like small roads of Jaipur.

Our students were curious to see the famous Kremlin. They were always peeping through the windows of the Hotel Orilek towards the sky touching buildings of Kremlin. To our great pleasure we were invited to a lunch at the Kremlin at 1 p.m. on 4th July '87. Our boys and girls reached there quite earlier to see the famous Kremlin Secretariat of USSR. It is here in this seat of Soviet power, that

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**Reader in Commerce and Programme Co-ordinator NSS, Patna University—Group Leader of the Youth Contingent.*

leaders of the USSR, Council of Ministers take decisions of world importance. All major pronouncements of the USSR are signed in the Kremlin. Many historic and startling pages of the modern world we live in have been written in and by Kremlin. We all went to see from inside this epicentre of colossal Soviet power, whose weight is now felt far in the depths of stellar space. To our great surprise all the six interpreters left us outside the walls of Kremlin. However, our Indian interpreter was with us. Our identity cards were examined by the police at the gate and we were allowed entrance. A group of boys and girls of Bharathidasan University Tamil Nadu and myself went a little inside to see its beauty. The waters of the River Moskva wash every day the foot of the giant Kremlin ensemble. I have seen many buildings but its Uspensky and Arkhagilsky Cathedrals are architectural wonders are to be seen to be believed. The Palata (Hall) and the Bell tower in Ivan the Great are really structures of magnificence. The Uspensky Cathedral which towers over others, is a giant structure crowned by five golden cupols. The architecture I was told is entirely Russian. Two Engineering students were with me. We saw that there was no resemblance with Indian buildings. The Russians are very touchy when any of their great achievements is traced to the influences alien to their genius and tradition. But they do accept the facts of history. For example, they accepted that Uspensky Cathedral was built with the aid of foreign masters whom they invited to Moscow. The building is built of brick, white stones, balustrades and stanways. It was built in 1487. We were also told that the old big hall (Palata) is perhaps intact.

The Bell Tower of Ivan the Great is really surprising. It is a great engineering feat. What lingered in my mind was the ingenuity of the human mind that had conceived and executed this great architectural wonder.

Of course, we missed the opportunity of paying a visit to the apartment of Lenin. On return when we consulted our Russian interpreter, Mr. Tamur, he told me that Lenin's small desk, pens and pencils are preserved which had turned out words of fire and passions. I was told again that Lenin was known for his simplicity in life and for his simple manners of contact with the ordinary people. It is not difficult for a visitor to understand why Lenin is adored by the entire USSR as its leader, teacher and the guide of the socialist state. Everywhere we went we saw how people-men, women and children recollect his name with infinite love and respect.

On our way to Gorky Park we saw a few old wooden houses of pre-revolution days. Although it was one of the busiest hours of the day, the streets seemed curiously empty. Cars, electric buses, and trams all of a strikingly uniform design flowed easily in two broad streams. The two streams, wide as they were, still had room to leave a lane free in the centre between them which was left clear by decree for ambulance, fire vans and State vehicles. The pavements too were wide and filled with white citizens of Moscow who seemed to be plodding doggedly in between their huge impersonal apartment blocks. Their pace struck me as that of a country people strudging home from their fields.

Gorky Park is perhaps the largest modern park of Moscow and it was a joy to see. One feels that the architects designed the Park to tell the story of the ease, comfort and leisure that the Soviet Revolutionary leadership had promised to the Russian people. The big park was full of Russian youths and people to see the open air performances of the Indian dances. The whole park was adorned with Indo-Soviet flags and Indo-Soviet Friendship symbols.

I do not know how I shall delineate my impressions of Moscow and its people. Many memories have crowded upon my mind one after the other, each throwing the outlines of the other into background. I was deeply struck by the simplicity and large heartedness of the people of Moscow. Their easy effortless courtesy and politeness has surpassed the Lucknawi touch of India. The traffic was dreadfully fast but never disorderly. Even a tiny tot or a lame old woman can reach the other side of the road safe in the densest of motorcades. Discipline in USSR is superb and there is no speed breaker on the roads. Buses are running by electricity. I felt that Muscovites have developed an inner sense of duty and discipline. I saw through my car a school boy run way from the bus stand to give a helping hand to a grey haired old man and escort him safe across the crowded street. The cleanliness of the city was like clinical tidiness of its wide avenues and streets. We saw a young Russian girl dressed in her best pick up from the green turf of the garden a speck of dirt and carry it to the garbage heap. The civic consciousness of the Moscovites was most impressive in all walks of life. They are fiercely patriotic, highly resentful of even the faintest disrespect shown to their land, its customs, beliefs, systems, etc. But at the same time they are free from prejudices of race, or colour. They have very good regards for Indians and citizens of other countries also. I did not notice any diversity of

(*Continued on page 11*)

Festival of India in USSR

Report from Siberia

Sampson David*

"The abiding friendship between two countries with different social systems and traditions is a model worthy of emulation by other countries". **—V.V. Giri**

Over the last four decades the Indo-Soviet Friendship has weathered many a storm and is a significant factor in world politics. Cultural contacts between these two countries are pretty old. The works of Tagore, Nehru, Prem Chand are very popular in the Soviet Union. Likewise, Russain literature and outstanding writers like Tolstoy, Gorky, Chekhov, Turgnev, Puskin, Dostoevsky, Gogol and many others have always been famous in India. After establishment of diplomatic relations, the cultural exchange between the two countries has grown apace. Exchange of cultural delegations from India to USSR and vice versa has become a normal feature. But the recent exchange of Festival of India in USSR and Festival of USSR in India has been the most noteworthy in the history of two nations.

As part of the Festival of India celebrations in USSR a group of 180 youth, including 49 university youth, participated in the main inaugural ceremony held in Moscow on July 3, 1987. The group was further sub-divided into five batches and I was the group leader of the first batch which visited Siberian region, apart from Moscow, for a period of two weeks.

Our group landed in Moscow on July 1, 1987 and was received with love and warmth by the Soviet youth, carrying banners flashing — "Welcome to Youth Participants of Festival of India". After having initial introduction, we were taken to an 18-storey hotel GOSTINICH ORLONOK.

The large-scale celebrations of the UTSAV began at the VI Lenin Central Stadium, Luzhniki covering 114 hectares. Various structures of Indian architecture sprang up at the venue, exhibiting replica of mini-India.

During the evening, we were led towards River Moskva from where we sailed down towards the stadium. A mammoth crowd had assembled on both banks of the river, witnessing a colourful cultural rendition by the dancing youth. As we alighted at the stadium from the barges we found stalls and kiosks set up on this occasion making brisk business of Indian handicrafts, carved wood, jewellery, leather and textile goods. Cooks from India prepared best possible fresh dishes of Dosa, Idli, Chana Bhatura, Paratha and Curry, etc. to offer to the eager Moscovites.

A gala performance at the stadium's big arena commenced at 9 p.m. in the presence of over one lakh spectators. The Indian youth rendered a bewitching performance of folk dances and music. The programme ended with spectacular fireworks displaying myriads of flowers coming down on earth.

A youth programme was organised by the young Moscovites on July 4 at the Gorky Park in which Indian youth gave a joint performance with their Soviet counterparts. The programme was highly appreciated by the audience and created an impact on the youth of two countries by bringing them closer as they were witnessed exchanging autographs, badges, cards, addresses, coins, etc.

As a part of the youth programme, a Seminar was also organised on 'Soviet-Indian Cooperation as an important factor of peace and stability in Asia and in the world'. I had the honour to organise the Seminar from the Indian side, which was attended by public figures, scientists and youth. Two university youth—Anirban Ghosh of Jadavpur University and Gayatri Vedantam of Bangalore University were among the five participants from India.

The same evening the youth delegation dispersed into five batches for five different regions of USSR. Our batch included students of Bihu Folk Dance from Gauhati University and the Garbha Folk Dance troupe from Gujarat State. The Bihu Folk Dance was accompanied by appropriate songs and playing of instruments. The songs have a wide range of folk tunes to which dancers make their body movements

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**Cultural Officer, Association of Indian Universities.*

at the same time keeping time with Dhola (drum), Pepa (horn-pipe), Taka (a partly split horn) and the like. The dance is an expression of the exuberant spirit of spring and erotic sentiment. Youth of Gujarat State presented a splendid performance of Garbha Folk Dance. They also gave joint performance with the Soviet youth at many places.

Our batch flew from Moscow on July 4 and landed at Irkutsk after an eight hour flight. A huge crowd had gathered at the airport to receive us with traditional welcome. We were taken to lake Baikal—the unique lake that attracts scores of tourists to eastern Siberia. It was a very exciting journey by bus from Irkutsk. After presenting a cultural programme we boarded a Friendship Youth Train, which was to be our house for the next few days.

We arrived at a very picturesque city of Bratsk on July 6 and visited the Bratsk hydroelectric Power Station. This station is built on the Angara river and has generated some 500 billion kilowatt HP of electricity more than any other station in the world. The Friendship Train also had a batch of about forty Soviet young people representing "Skomorokhi" ensemble group. This group studies village folklore, forgotten dances and ancient musical instruments. During evenings our batch had conferences and parties with this group in the train.

For about ten days our batch travelled by the Friendship Youth Train on a route stretched along the Bailkal-Amur mainline, which connects the major economic centres in the USSR's east. In short, the route is known as BAM, which has become a symbol of the builders, courage, heroism and youth, as most of the builders came to Siberia on assignment from Komsomol organisations.

The itinerary ended in a jiffy as the train stopped in the town of Nyurengri in Yakutia. The place is world famous for the gold and diamonds which command high prices at the world auctions. This place is also known as the coldest spot in the USSR.

We assembled again in Moscow for a day to catch our flight for Delhi but with heavy hearts. There was sadness all around as it was difficult for us to accept to leave our very dear friends with whom we had built a close acquaintance. Tears and sobbings were the only things to see at the airport as the plane flew up with assurance of meeting again—sometime. ☐

Moscow — An Intimate Portrait

(*Continued from page 9*)

political opinion among the Russians I talked to. They are, of course, afraid of the horrors of war and they are eagerly waiting for a permanent peace in the world. Many of them were talking in a sad tone. They said that "the earth will be one atomic cementry if the war breaks out". Though the wounds of the last war are healed, their scars are marked deep in the flesh of the citizens of USSR. There is hardly any town or home which has escaped the ravages of the second world war. A war escaped warrior told me many gruesome stories of fascist barbarities. The losses in men were colossal and destruction of property beyond calculations. The Russian will never forget those days. Their sentiment for peace is so deep-rooted that they pour out their every thing. At Gorky Park an old Russian lady left her tiny grandchild in my arms, offered me a beautiful, fragrant flower and said, "MIR (Peace), Me Khateem Mir (We want peace)". All Russians were pronouncing "Mir, Durijiya, Festy"—We want peace, friendship and festivals.

I found the ordinary Russian emotional to the extreme and touchy and sensitive too. He is uncommonly friendly, sometimes carrying his friendliness to naivety. Citizens of Moscow looked very well dressed. Women's dresses are faminine to the last detail without a shade of vulgarity or offensiveness to taste. I did not see any Muskovite women dressed in low-cut garments nor did coquetry. All citizens have robust physique and self confidence. The smiling faces of Russian children untouched by hardships, scarcities and the sorrows of life was most joyful thing. Proper bringing up of the younger generation is the national task of the Soviet Government. Education in Russia is purposeful and well moored to the traditions of the land and there is a uniform policy of the Government. Equal stress is given on acquiring knowledge and developing a very robust, healthy attitude to life. Unlike our country pessimism does not seem to have blurred the youths of universities. The youths know that on leaving the portals of the college or the university or the institute they will not be dogged by joblessness. They enter the world readymade for the task, cultured and free from the prejudices of caste, colour and creed. They take their life more realistically. They work hard in the factory or farm with full devotion to the Nation.

We left Moscow on 4th July by train number II MOLODOGOVAST DEETS for other places, full of emotions and warm love for its people. The people of Moscow were hospitable in the really oriental way and their friendship and love for India flowed as freely as the waters of the MOSKAVA RIVER. Moscow was a small rehearsal of what we were to visit in the interior of USSR during our visit of 13 days by special train with 60 Russian youths. ☐

FESTIVAL OF INDIA IN USSR

Jodhpur Varsity Contingent

The youth were sent in three groups, and we were in the third group representing Jodhpur University to perform classical music. Two youth were selected in which Shri Nikhil S. Bidwalkar played on Santoor and Shri Yashwant Sharma played on Tabla. Shri M. L. Wadhera was selected as a Team Manager. In addition there were artists from Meghalaya, Dr. H. S. Gour University, Sagar, Dayalbagh Educational Institute, Agra and University of Bombay.

Santoor is an ancient folk musical instrument. It was introduced as a classical instrument by Pt. Shiv Kumar Sharma. Many people have started learning this instrument. Santoor means an instrument of hundred strings and is played with the help of two sticks.

Our contingent arrived at Tashkent airport on August 31, 1987 and we were welcomed with great warmth by the representatives of the young Communist League and the members of Komsomol.

The main inaugural took place at the Tashkent Lenin Square on September 4, 1987. The Square was beautifully decked up. A number of stages were erected around. About one lakh people assembled to witness the cultural programme. I got an opportunity to play on four stages. On three stages I played for fifteen minutes while on one stage I played for half an hour.

Indian Classical Music and Santoor in particular was liked by the Soviet people so much that they surrounded us for our autographs and photographs. They put many beautiful badges on our 'kurtas' and expressed the feeling of their love. It was quite obvious from their gestures that the Soviet people quite well understand the depth of Indian classical music.

In addition to Tashkent we also rendered our performances at Samarkand, Bukhara, Namangan, Nirrin and Uchkurgan, Aandijan, Jalalkunduk, Mangilan, Osk, Fargana, Kokand. Many improptu items were also given by us at factories, farms, etc.

There is a similar musical instrument like Santoor which is called 'Chhang'. It is played on the stand and is used particularly on the songs of Uzbekes.

There are many beats (Taal) in the Russian Music like the Indian Music. Another folk instrument was found there which is quite similar to 'Dafli'. Shri Yashwant Sharma played on Dafli. While a number of people expressed their desire to learn Tabla. They were amazed to see the swift fingers on Tabla.

Reported by: **Nikhil S. Bidwalkar**

HAU Contingent

The Haryana Agricultural University 'Dance Team' (Hori Dance) comprising Bhag Singh, Ashok Mulodia, Surender Paul, Sudesh Saharan, Anju Kakkar, Anju Nagpal, Seema Kakkar, Shalini Sandhu, Babita Kent (Background Singer) accompanied by Shri Vinod Kumar (Harmonium Player) and Bhim Singh (Nagara Player) under the leadership of Dr. R. S. Waldia, President, HAU Drama & Music Club, Hisar participated in 'Festival of India in USSR' from July 15-31, 1987.

The first performance of the team was given at Leningrad on July 17, 1987. It was a big draw. The morale of the participants were very high and they were touched by the love, affection and respect of the Soviets. It was proved that languages, faiths, customs and culture are no barriers to human relations, when there prevails a sense of brotherbood, love and affection.

On July 20, 1987, the team headed towards Ukraine. There, the team grew in size (33) due to merger of the Orissa Team in it. Dr. K.K. Kirti, Under Secretary in Ministry of Youth and Sports Affairs was the leader of the whole contingent. The group visited Kiev, Lvov, Uzgrad, Shepetovka, Uman, Herlson, Simpheropol and Zaporozhye.

The day started with excursions and sight seeing in the morning and ended with a variety of culture performances in the evening. The H.A.U. Dance, that had both boys and girls in it, exhibited a typical 'Holi Celebration' in a Haryana village, was highly acclaimed high popularity.

We were greatly impressed by the sense of patriotism of Russians. They love to see their country clean and strive hard for its prosperity. The Russians love flowers a lot and take a great care of them. Discipline is part and parcel of their life. They possess enormous capacity for work and have got a sense of dignity of labour. Though the people live on Community Farms, their living standard was almost similar to that of people in cities. It was greenery all the way round. The Russians feel proud of their heritage and worship the martyrs of their country.

During shopping, it was noticed that every thing has a price label and it is constant throughout the country.

At the time of our departure, everybody was overwhelmed with emotions. It seemed that we were departing from our own family members.

The team returned to Delhi on 2nd of August, 1987 with ever-lasting memories. All the members learnt at least three things in common from Russians :

1. There is no short-cut to hard work.
2. Nationality is the only thing of which one should feel proud.
3. Regularity, punctuality and discipline always pay in one's life.

Reported by: **Dr. R.S. Waldia**

Inter-Varsity Youth Festivals 1987-88

Thou hast made known to me friends when I knew not
Thou hast given me seats in homes not my own
Thou hast made the distant near and made
Brother of the stranger……
When one knows thee then alien there is none……

—Tagore

Our University Youth will display their talents in art and culture once again during the ensuing Inter-University Youth Festivals scheduled from November 1987 to January 1988. Association of Indian Universities (AIU) can take legitimate pride in the revival of these Youth Festivals which were discontinued two decades ago. The programme has been adopted to set up a new cultural order for fostering dynamism in youth to contribute constructively for the achievement of national integration.

It is a matter of great satisfaction that 108 students from our universities participated in the Festival of India in USSR during July-September 1987. The participants were selected from the Inter-University Youth Festivals held during 1986-87. They visited USSR in three groups each for two weeks and included dancers, musicians, singers and others. After participating in the main inaugural ceremonies held at Moscow Leningrad and Tashkent, the youth toured around in different regions of USSR. They were received everywhere with bread and salt ceremony, a traditional way of showing warmth and hospitality to the guests in USSR.

Our students regaled the Soviet audiences with fascinating dances and music. In between their performances, they were witnessed exchanging autographs, badges, cards, addresses, coins and other souvenirs. Opportunities like this would encourage and open avenues for a number of upcoming artists of universities in the field of music and dance.

The 1987-88 programme of the Inter-University Youth Festivals includes five major events of Music, Dance, Literary Activities, Theatre and Fine Arts. On the basis of the evaluation of Youth Festivals held in the last two years, following decisions have been made for this year's festivals :

(a) Theme for the Inter-University Youth Festivals 1987-88 will be NATIONAL INTEGRATION which would be applicable to the cultural events of Group Song (Indian), Folk Dance, One Act Play, Skits, Mime and Fine Arts.

(b) Strength of the university contingents has been increased from 20 to 30, including a total of 5 accompanists and officials.

(c) Total number of participants and accompanists for Folk Dance has been increased from 11 to 15.

(d) In the Group Song (Indian) item, the participants will be required to present two songs in 10 minutes, out of which one song will be a Folk Song.

(e) Sub-event of Classical Instrumental Solo under Music has been further bifurcated into sub-events of 'Taal Vadya' (Percussion instruments) and 'Svar Vadya' (Non-Percussion Instruments).

A fascinating feature of this year's Youth Festivals would be the participation of 500 Russian Youth, who will be visiting India in several batches as part of Festival of USSR in India. In view of this, the AIU Cultural Committee has approved the following dates and venues for holding the youth festivals :

Zone	University & Venue	Dates
North	Aligarh Muslim University, Aligarh	November 21-24, 1987
West	University of Bombay, Bombay	December 4-7, 1987
South	Madurai Kamaraj University, Madurai	December 26-29, 1987
East	Manipur University, Imphal	January 4-7, 1988
National	Amravati University & Punjabrao Krishi Vidyapeeth, Akola	January 26-29, 1988

In addition, it is proposed to organise a Cultural Evening for the visiting Soviet Youth at the following venues and dates :

Venue	Dates
Kashmir University, Srinagar	November 27, 1987
Aligarh Muslim University, Aligarh	To be announced
Rajasthan Agrl. University, Udaipur	November 28-29, 1987
Bombay University, Bombay	December 7, 1987
Poona University, Pune	December 8-9, 1987
Marathwada University, Aurangabad	December 11-12, 1987
Gujarat University, Ahmedabad	December 13, 1987
Madurai Kamaraj University, Madurai	December 26-27, 1987
Manipur University, Imphal	January 6-7, 1988

M.Sc. in Oceanography

The Calcutta University proposes to introduce an M.Sc. Course in Oceanography from the next academic session. The University Grants Commission is reported to have given its consent in this regard. This was revealed by Dr. Dilip Sinha, Pro-Vice-Chancellor of the University in Calcutta recently. He said that the technical assistance in introducing this course would be provided by the Department of Science and Technology, Govt. of India.

Dairy Technology Course Recognised

On the approval of the Chairman, Board of Assessment for Educational Qualifications, the Government of India have decided to provisionally recognise the one year Post-Diploma Course in Dairy Technology awarded by the Board of Technical Education, Rajasthan, Jodhpur to the students of the Government Polytechnic, Jodhpur for the purpose of recruitment to subordinate posts and services under the Central Government.

New Courses Offered

The Madurai Kamaraj University has introduced several new courses from the current academic year. These include: The Certificate Course in Word Processing; M.B.A. Course for Army Personnel; M.A. in Tamil and Mass Communication; M.A. in Tamil and Folklore; and M.A. in Tamil & Comparative Literature

Kashmir Varsity Switches Over to 3-Year Degree Course

The University of Kashmir has decided to switch over to the Three-Year Degree Course after 10+2 stage of education with effect from the current academic session. No student shall be eligible for the first degree unless he/she has successfully completed a three-year course of study. The University shall conduct an examination at the end of each year of the Three-Year Degree Course.

Only such of the candidates as have passed Three-Year Degree Course after 10+2 stage of education shall be eligible to various postgraduate and other programmes in the University from the academic session 1990 onwards. However, until 1990 the University shall continue to award two-year course degree for failures and other such categories of students.

M.Sc. Biology Recognised

The Tamilnadu Government has recognised the M.Sc. (Integrated Biology) and M.Sc. (Microbiology) of the Madurai Kamaraj University for purposes of appointment in the State services.

Manipuri Encyclopedia

Manipur University proposes to publish a Manipuri Encyclopedia in three volumes, viz., (i) Humanities (ii) Social Sciences and (iii) Science and Technology. The main objective of the Encyclopedia is to bring to light the various aspects of life and culture of Manipur from earliest times to the contemporary period and to diffuse this knowledge among the people of Manipur, the rest of the country and the world.

The proposed publication dates for different volumes are: Humanities—January '88, Social Sciences—January 1989, and Science and Technology—January 1990.

Academic Staff College

The University Grants Commission (UGC) has approved the proposal of the Madurai Kamaraj University for setting up an Academic Staff College at the University from the year 1987-88. The post of a Director has also been sanctioned.

News from Agril. Varsities

Agricultural University for NE Region

The Union Government has decided to set up a Central Agricultural University in the north eastern region to cater to the agricultural needs of the entire region. This was announced by the Union Agriculture Minister, Shri G. S. Dhillon, when be visited Arunachal Pradesh recently. He said that all States of the region will have one campus each of the proposed university. The Arunachal Pradesh campus will have horticulture and forestry as specialised subjects, he said.

Shri Dhillon also assured the Arunachal Pradesh Government of all possible help for the development of horticulture and animal husbandary in the State. He said two official teams will soon visit the State to help formulate a plan and assist the Government in undertaking scientific research for the development of horticulture and animal husbandry.

The teams will also explore possibilities of processing the horticulture products locally and their suitable marketing besides setting up of cold storages for preserving them. They will also look into the preservation of various orchids and medicinal plants available in the State, he said.

A branch of the North Eastern Hills Agriculture Development Centre is proposed to be set up at Itanagar. The Minister said that a National Research Centre for Yak and a Mithun Research Centre will be set up near Darrang in west Kamenv district and Nagaland respectively. The Centre has also sanctioned setting up of a fish farmers development agency in Arunachal Pradesh.

Multi-Crop Seed Drill

The Department of Farm Machinery and Power Engineering of G. B. Pant University of Agriculture & Technology, Pantnagar has developed an efficient multi-crop seed drill consisting of three sets of split fluted roller type seed metering mechanism for being fitted in the existing seed drills for sowing small seeds e.g. rape seed, mustard and millets and medium seeds as urd, moong, lentil and arhar, etc.,basides seeding wheat, rice and soybean. This seeding mechanism is helpful in calibrating optimum seed rates of as low as 4 kg/ha as well as placing seeds uniformly at proper depth in the rows.

The first set has 10 grooves of size 1.5 x 2 mm and is used for small seeds like lahi, mustard and millets whereas the second set, consisting of 10 grooves of size 4 x 7 mm is helpful for sowing medium seeds as moong, urd and arhar. The third set having 12 grooves of size 7 x 10 mm is suitable for sowing wheat, pea and soybean, etc.

It has been observed that about 8% yield increase is attained if crops are sown by using this mechanism in bullock or tractor drawn seed drill.

More Powers to ICAR Favoured

A three-day national workshop on review of agricultural research and education systems in India, organised by the ICAR Review Committee, was recently held at the National Academy of Agricultural Research Management (NAARM), Hydrabad. Delivering the inaugural address at the workshop, Shri G. S. Dhillon, Union Agriculture Minister favoured vesting ICAR with "statutory provision to ensure that the standards of agricultural education in the state agricultural universities are maintained and its assistance should act as a lever to ensure that the funds are not spent on the programmes other than those for which they have specifically been provided".

He expressed concern over the tendency to start new agricultural universities and faculties in the existing universities without providing proper justification and prior approval of the Council. The Council will have to be provided with the authority that no such university or faculty is allowed to be started without proper review of manpower needs. This is rather unfortunate that the manpower planning in agriculture has not received adequate attention. This has resulted in excessive manpower in certain sectors and serious shortage of manpower in others, he added.

Mr. Dhillon said the ICAR had grown tremendously over the last few decades. In view of the large network of state agricultural universities, it was necessary for the Council to delineate the responsibilities of its own institutions and the universities in education, research and extension education.

He felt ICAR could now play a

NATIONAL CYCLE RALLY-CUM-INTEGRATION CAMP

Youth Hostels Association of India will organise a National Cycle Rally and Integration Camp in collaboration with the Deptt. of Youth Affairs & Sports, Govt. of India, as a part of National Youth Day celebrations on 12th January, 1988.

The purpose of the programme is :

(i) to inculcate in the young adventure loving people a desire to acquire knowledge, and love and care of the country-side during their cycling spree;

(ii) to foster friendly relations between the rural and the urban people;

(iii) to imbibe reverence for all life, nature & creations;

(iv) to promote inter-state contact without distinction of class, colour or creed by providing a common platform in the camp thereby promoting National Integration.

The rally-cum-camp will commence on 10th January 1988 at Gandhi Darshan Grounds, near Rajghat, New Delhi and will last till 16th January, 1988. More than 1000 young boys and girls from different parts of the country are expected to join the rally.

For further details, please contact : Major Y. K. Ahluwalia, National Secretary, Youth Hostels Association of India, 5 Nyaya Marg, Chanakyapuri, New Delhi 110021.

greater role in aiding, promoting and co-ordinating research and education rather than conducting research and thus further adding to its infrastructure. He wanted ICAR to act as an apex body and guide the destiny of agriculture research and education in the country.

The Union Minister also observed that agricultural production in some states had reached a stage where there was need for diversification from wheat and paddy to other more remunerative agricultural sectors like dairying, horticulture and export oriented commodities. Stressing the need for technologically feasible and economically viable crop production systems, he said emphasis so far had been on commodity production research.

News from Abroad

And now a "Superlibrary"

Several colleges and universities in the Washington, DC, area have recently announced plans to establish a "superlibrary" composed of parts of each library's collection that would serve faculty and students at all the institutions.

The library, a project of the Consortium of Universities, will hold more than 5 million volumes, most of them rarely used books and journals. A central computer data base, accessible from computer terminals at each campus, will allow researchers to conduct bibliographic searches and order materials. Requested materials will be delivered within a day.

Prince George's County, MD, will donate land near Washington for the $21 million facility. Consortium officials are seeking federal funds to finance part of the cost; the rest is expected to come from participating institutions and private sources.

The concept for the library was discussed for several years among librarians in the Consortium. Presidents of the participating schools later decided that such a library would help control the costs of library construction, book preservation, and acquisitions. The superlibrary also would be involved in preserving books, a process few individual libraries can afford.

Participating institutions are American, Catholic, Gallaudet, George Mason, Georgetown, and George Washington universities, Marymount College of Virginia, and the University of the District of Columbia.

Increased Funding for Education

The US Senate has recently approved a $129.4 billion appropriations bill for the Labor, Health and Human Services, and Education departments that includes funding increases for fiscal 1988 education and health programs.

The bill includes $21.2 billion for education programs—$600 million more than the level approved by the House and $1.7 billion more than is currently available. It would provide $6.9 billion for the National Institutes of Health—$260 million less than the House and about $700 million over the current level.

Under the Senate proposal, student financial aid programs would receive $8.78 billion, including $4.5 billion for Pell Grants about the same amount as proposed by the House. However, the Senate bill assumes that the maximum award would remain at $2,100,

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ASSOCIATION OF INDIAN UNIVERSITIES

CORRESPONDENCE COURSE IN EVALUATION METHODOLOGY AND EXAMINATIONS

Applications are invited from College/University teachers for admission to Correspondence Courses in Evaluation Methodology and Examinations at Basic Level, Intermediate Level and Advanced Level/Special Professional Course. The duration of each of the three courses is six months. A personal 'Contact Programme' for three days is planned for each of the three courses. Universities/Institutions sponsoring candidates can meet the registration/course fees from out of unassigned grants by UGC.

Request for prospectus and application form accompanied by crossed Indian Postal Order for Rs. 10/- drawn in favour of the Secretary, Association of Indian Universities and a self addressed stamped envelope (Rs. 2/-) should be sent to the Project Director (Exams), Association of Indian Universities, 16 Kotla Marg, New Delhi 110002. Last date for receipt of applications is extended to **15th November, 1987** for both sponsored and non-sponsored candidates.

while the House assumes an increase in the maximum award to $2,300.

Supplemental grants would receive $428.2 million; College Work-Study would receive $614.4 million; and TRIO programs would receive $210 million under the plan. Graduate fellowships would receive substantial funding increases, while most categorical programs would be funded at their current levels.

Sports News

Indian Universities' Teams

Cricket (W)

Indian Universities Women Team will participate in the next Junior National Women Cricket Championship to be held at Lucknow from Nov. 17 to 27, 1987. Forty eight women players from various universities have been invited to participate in the trials. A Coaching Camp for the selected team is being organised from Nov. 1 onwards under the charge of Mr. Balu Achareth, Cricket Coach from Calicut University. Indian Universities are the defending champions.

Hockey (M)

The Jawaharlal Nehru Hockey Tournament is being organised at New Delhi from Nov. 14. Indian Universities Hockey Team to participate in the Tournament will be selected at the Selection Trials being organised at Delhi University from Nov. 5 to 7, 1987. The selected players will undergo training prior to its participation in the Tournament.

Inter-University Tournaments

Wrestling

The four-day Inter-University Wrestling Tournament which is organised on All India basis commences at Mysore University from Nov. 5, 1987. Wrestlers from about 75 universities will compete in different weight categories.

Basketball (W)

The Inter-Zonals of the Inter-University Basketball (W) Championship will also commence on Nov. 5, 1987 at Kurukshetra University. In this Championship two best teams from the South West Zone held at Sardar Patel University earlier will meet the best two universities of the North East Zone which concludes at Kurukshetra on Nov. 3, 1987.

Volleyball (M)

The Inter-Zonals of the Inter-University Volleyball (M) Tournament will also commence at Bhagalpur from Nov. 5, onwards. This Championship is played on 4-Zone basis and the winner and runners up teams from all the four zonal tournaments participate in the Inter-Zonlas.

Kabaddi (M)

The Inter-University (M) Championship which is a four zone competition will be organised at G.B. Pant University of Agriculture and Technology for the North Zone from Nov. 16 to 21, 1987. Twenty three teams have so far consented to participate. Madurai Kamaraj University will organise the South Zone Championship from Nov. 9 to 15, in which nineteen teams are expected to participate. Shivaji University, Kolhapur is the venue for the West Zone Championship which will be organised from Nov. 29 to Dec. 2, 1987. Twenty eight teams are scheduled to participate in the West Zone Championship. The Inter-zonals of the Kabaddi Championship for men will also be organised at Shivaji University, Kolhapur from Dec. 4 onwards.

School of Planning and Architecture

New Delhi-110002

Sixth

Annual Convocation on

4th November 1987, 5.00 P.M.

At

Architecture Campus
6, Block-B, Indraprastha Estate,
New Delhi

Bruno Dias Souza
DIRECTOR

Andhra Pradesh Open University

HYDERABAD

ELIGIBILITY TEST FOR ADMISSION TO THE B.A./B.Com/B.Sc COURSES (1988-89)

***Eligibility Criteria :** Candidates with OR without any formal educational qualifications are eligible to appear at the Eligibility Test for adimission to the B.A/B.Com/B.Sc (3 year Degree Course) of the University provided that they complete 21 years of age by the 1st of July, 1988.

***Date and Venue of the Eligibility Test** : The test will be conducted on the 6th of March, 1988 (Sunday) in English and Telugu Media, at all the Study Centres of Andhra Pradesh Open University which are located in the Twin Cities of Hyderabad and Secunderabad and in all the Districts of Andhra Pradesh. It may be conducted outside the State also if a considerable number of candidates apply from any particular place outside the State.

***How to Obtain the Application Form** :

(a) **By Post** : You can obtain the application form by Registered Post from the office of the Controller of Examinations, A.P. Open University, 8-3-952/10/2/1, Srinagar Colony Road, Punjagutta, Hyderabad-500016 by sending a crossed Demand Draft/Indian Postal Order for Rs. 15/- drawn in favour of the Registrar, A.P. Open University, along with the requisition letter.

(b) **In Person :** You can obtain the application form in person by submitting a DD/IPO for Rs. 5/- drawn in favour of the Registrar, A.P. Open University, payable at Hyderabad from the Controller of Examinations, A.P. Open University, 8-3-952/10/2/1, Srinagar Colony Road, Punjagutta, Hyderabad OR from the office of the Co-ordinator of Study Centres situated through districts of Andhra Pradesh.

***Commencement of the Sale of the Application Forms** : 24th of October, 1987

***Last Date for the Sale of the Application Forms** : 24th of November, 1987

***Last Date for Submission of the Filled in Application Forms** : 1st of December, 1987

***How to Apply** : You have to fill in the application form and submit it to the Controller of Examinations, A.P. Open University, 8-3-952/10/2/1, Srinagar Colony Road, Punjagutta, Hyderabad-500016 in person OR send it by Registered Post so as to reach him on or before the last date fixed for it i.e. the 1st of December, 1987.

***Direct Admission to B.A/B.Com/B.Sc Degree Courses** : Candidates who have passed the Intermediate Examination conducted by the Board of Intermediate, Andhra Pradesh or any examination equivalent thereto are eligible for direct admission to the Degree Courses and are not required to appear at the Eligibility Test. A separate notification will be issued for such candidates sometime in the month of April/May, 1988.

REGISTRA

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographicadetails l like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

CURRENT DOCUMENTATION IN EDUCATION

A List of Select Articles culled from Periodicals received in the AIU Library during October, 1987.

EDUCATIONAL PSYCHOLOGY

Miall, David S. Learning in autonomous student groups : Learning skills as a predictor of satisfaction. *Studies Ednl Eval* 13(2), 1987, 175-84.

Terenzini, Patrick T. and Wright, Thomas M. Influences on students' academic growth during four years of college. *Res Hr Edn* 26(2), 1987, 161-79.

EDUCATIONAL PLANNING

Adiseshiah, Malcom. Education reform perspective in India. *New Frontiers Edn* 17(3), 1987, 1-13.

EDUCATIONAL ADMINISTRATION

Raman, A. and Casimir Raj, N. The autonomous Loyola College : An analysis of its administrative structure. *New Frontiers Edn* 17(3), 1987, 70-78.

CURRICULUM

Ghosh, Arun. Tyranny of education system. *Eco & Pol Weekly* 22(38), 1987, 1577-78.

TEACHERS & TEACHING

Banerjee, Sumanta. One step forward —and backs to the wall. *Eco & Pol Weekly* 22(38), 1987, 1582-85.

Feldman, Kenneth A. Research productivity and scholarl accomplishment of college teachers as related to their instructional effectiveness : A review and exploration. *Res Hr Edu* 26(3), 1987, 227-98.

Singh, Gurbir. College teachers' strike. *Eco & Pol Weekly* 22(38), 1987, 1586-88.

Zehavi, N. and others. A model relating teacher expectation and student difficulties. *Studies Ednl Eval* 13(2), 1987, 185-92.

EDUCATIONAL RESEARCH

Corder, Jim W and Baumlin, James S. Opinion is, of course, bad; research, on the other hand, is quite good : The tyranny (or is it myth?) of methodology. *J Hr Edn* 58(4), 1987, 463-9.

EDUCATIONAL TECHNOLOGY

Atre, P.S. and Barde, N.R. Modernizing education : The computor way. *J Indian Edn* 12(5), 1987, 21-5.

Duchastel, Philippe C. Structures and methodologies for the evaluation of educational software. *Studies Ednl Eval* 13(1), 1987, 111-16.

Faidhi, J.A.W. and Robinson, S.K. An empirical approach for detecting program similarity and plagiarism within a university programming environment. *Computers & Edn* 11(1), 1987, 11-19.

Locatis, Craig. Instructional design and new technologies. *New Directions Cont Edn* (34), 1987, 89-100.

Makinson, G.J. and Morarji, H.L. A dialogue system to teach numerical analysis. *Computers & Edn* 11(1), 1987, 47-52.

Mudd, Samuel and Wilson, William. Achieving curriculum-integrated computing. *Computers & Edn* 11(1), 1987, 63-69.

Niemi, John A. Contexts of using technologies for learning outside the classroom. *New Directions Cont Edn* (34), 1987,

Plomp, Tjeerd and Carleer, Gerrit. Towards a strategy for the introduction of Information and Computer Literacy (ICL) courses. *Computers & Edn* 11(1), 1987, 53-62

Pratt, Daniel D. Technology and instructional functions. *New Directions Cont Edn* (34), 1987, 73-88.

Santhanam, M.R. Futurology and educational technology. *J Indian Edn* 13(1), 1987, 11-15.

Takemoto, Patricia A. Exploring the educational potential of audio. *New Directions Cont Edn* (34), 1987, 19-28.

Wapfer, William J and Oehmke, Roger L.T. Computer based data acquisition in the undergraduate lab. *Computers & Edn* 11(1), 1987, 24-32.

Wiesner, Peter. Utilizing television. *New Directions Cont Edn* (34), 1987, 9-18.

EVALUATION

Akpe, C.S. The "Kernel of Truth Theory" model or metaperceptual congruence methodology : An alternative approach to the study of innovatory programmes. *Studies Ednl Eval* 13(2), 1987, 219-23.

Arubayi, Eric A. Improvement of instruction and teacher effectiveness : Are student ratings reliable and valid ? *Hr Edn* 16(3), 1987, 267-78.

Arubayi, Eric. Programme evaluation : An empirical study of a degree programme in education. *Studies Ednl Eval* 13(2), 1987, 159-62.

Bok, Derek. Towards higher learning : The importance of assessing outcomes. *Change* 18(6), 1986, 18-27.

Slavin, Robert E. Mastery learning reconsidered. *Rev Ednl Res* 57(2), 1987, 175-214.

Udofot, Mbong A. Course evaluation and students' assessment in colleges of education : The Nigerian experience. *J Indian Edn* 13(1), 1987, 3-10.

Van Os, Willem and others. CAMOS : An evaluation mode for institutions of Higher education. *Hr Edn* 164(3), 1987, 243-56.

Webster, David S. Ranking academic quality. *Change* 18(6), 1986, 34-41.

ECONOMICS OF EDUCATION

Anderson, Richard E. Tuition prepurchase plans : Why they're needed and what's at stake. *Change* 19(2), 1987, 36-41.

Goldstein, Michael B. Equity financing : Research partnerships. *New Directions Hr Edn* (58), 1987, 67-76.

Thomas, Richard and Davies, Jonathan. Equity financing : Real estate. *New Directions Hr Edn* (58), 1987, 77-86.

PROFESSIONAL EDUCATION

Pascarella, Ernest T. Becoming a physician : The influence of undergraduate experience. *Res Hr Edn* 26(2), 1987, 180-201.

EDUCATIONAL JOURNALISM

Hunter, Deborah E and Kuh, George D. The "Write Wing" : Characteristics of Prolific contributors to the higher education literature. *J Hr Edn* 58(4), 1987, 443-62.

LIBRARIES

Breivik, Patricia Senn. Making the most of libraries in the search for academic excellence. *Change* 19(4), 1987, 44-53.

DISTANCE EDUCATION

Valicha, Kishore. Distance education and the Indian university system. *New Quest* (63), 1987, 171-76.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Bose, Anima. The methodist missionaries and women's education in the 19th century. *New Frontiers Edn* 17(3), 1987, 34-62.

Shah, Madhuri. Development of education in India. *New Frontiers Edn* 17(3), 1987, 25-33.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Biochemistry

1. Goswani, Syamalkanti. *Studies on comycobacillin, a new non-antibiotic peptide from mycobacillin producing Bacillus.* Calcutta.

2. Sen, Kunal. *Studies of plant tubulin and cloning of its gene.* Calcutta.

3. Sofat, Indoo Bala. *Studies on the inhibitors of mineralisation for urine of normal perons and kidney stone patients.* Panjab.

4. Srilatha Devi, T. *Prenatal diagnosis of fetal sex by amniotic fluid testosterone and follicle stimulating hormone (SSH), and their use in detecting sex linked disorders.* Osmania.

Microbiology

1. Kotia, Ameta. *Studies on the effect of resistance to heavy metals on biological properties of and production of extracellular substances by Staphylococcus aureus and Pseudomonas aeruginosa.* Panjab.

Botany

1. Dave, Gijuprasad Ravishankar. *Role of plants in induced breeding of edible fishes.* Patel. Dr. R.J. Patel.

2. Gupta, Ragini. *Ecological study of periphyton of Sagar Lake.* HS Gour. Prof. G.P. Mishra and Dr. (Mrs) Jaishree Purohit.

3. Jain, Narendra Kumar. *Studies on rough leaf spot disease caused by Ascochyta spp. on Sorghum bicolor (L) Moench.* Vikram. Dr. S.K. Chauhan.

4. Kannan, N. *Chemodynamics of pesticides in plants—Movement and dissipation in plants and surroundings.* Madurai.

5. Khan, Asif Mir Muzaffar Ali. *Studies on the nutritional requirements of two pathogenic fungi.* Osmania.

6. Patki, Subhash P. *A treatise on the Deccan intertrappean plants.* Nagpur. Dr. (Mrs) S.A. Paradkar.

7. Rajkumari Jojita Devi. *Orchids from Manipur : A study of 150 taxa.* Manipur. Dr. J. Ghatak.

8. Ram, Subash Chandra. *Ecosystem structure and function of Seral communities of degraded environments at Cherrapunji and adjoining areas.* NEHU. Dr. P.S. Ramakrishnan.

9. Saksena, Nitin Kumar. *Microbial transformation of steroids.* HS Gour. Prof. K.M. Vyas.

10. Sankara Reddy, Annapu Reddy. *Flora of Dharampur forests.* Patel. Prof. J.A. Inamdar.

11. Sharma, Shashi. *Ecophysiology of seeds of certain Himalayan shrub species.* H.P.

12. Thaker, V.S. *Changes in some enzyme systems associated with cotton fibre development.* Saurashtra. Dr. Y.D. Singh

Agriculture

1. Azad, Md. Padum. *Study on disease of ripe rot of chilli fruits caused by Colletotrichum capsici (Syed) Butler & Bisby.* Gauhati. Dr. G.K. Konger.

2. Hatwar, Rajan Gajanan. *Studies on growth, yield and quality of wheat varieties, Triticum aestivum Linn. as influenced by levels and sources of nitrogen under irrigated conditions.* Dr. S.V. Raikhelkar. Marathwada Agrl.

3. Hudge, Vaijanath Shivappa. *Physiological studies in groundnut, Arachis hypogaea L genotypes with special reference to photosynthesis and translocation of photosynthetically assimilated 14 C.* Marathwada Agrl. Dr. M.R. Salunke.

4. Kadam, Arun Shrimantrao. *Nutritional studies in sardar guava, Psidium guajava L.* Marathwada Agrl. Dr. V.K. Patil.

5. Mahant. *Evaluation of leaf and canopy temperatures as indices of soil moisture in maize.* Punjab Agrl.

6. Pandurang, Madane Namdeo. *Studies on bluegreen algae of saline-alkali soils from Western Maharashtra.* MP Agrl.

7. Saha, Lily. *Studies on salt tolerance of vegetable crops.* Calcutta.

8. Sen, Tarun Kanti. *Studies on clay non-clay interaction in the release of potassium in soil.* Calcutta

9. Senapati, Hrushikesha. *Microbial activity and nitrogen transformations in low land rice soil.* OUAT. Dr. B. Behera.

10. Sharma, Duni Chand. *Metabolism of some important chlorintaed insecticides through glutathione mediated enzyme system in insects.* Y.S. Parmar. Dr. Mahabir Singh.

11. Sharma, Kulwant Rai. *Tapping technique for oleoresin in blue pine, Pinus wallichiana Jackson.* Y.S. Parmar. Dr. A.N. Kaushal.

12. Sharma, Narender. *Physiological studies on geotropism in royal delicious apple, Malus domestica Borkh.* Y.S. Parmar. Dr. K.K. Jindal.

13. Sud, Ashwani. *Nutrient interaction studies in apple seedlings.* Y.S. Parmar. Dr. R.P. Awasthi.

14. Thakur, Bhau Singh. *Studies on the performance of some olive cultivers, Olea europaea L with special reference to pollination.* Y.S. Parmar. Dr. T.R. Chadha.

Zoology

1. Datta, Panchugopal. *Studies on the distribution of chromaffin cells in the heart, gonad, spleen, adrenal and its homologue of some vertebrates.* Calcutta.

2. Haq, Mainul. *Taxonomic studies on some Indian apoderinae with particular reference to the male and female genitalia (Coleoptera; Curculionoidea; Attelabidae).* Panjab.

3. Khadka, Ram Bahadur. *The feeding ecology of common carp, Cyprinus carpio Var. communis larvae, an optimal foraging approach.* Delhi.

4. Khan, Shamim Bano. *Neuroendocrine control of fat body metabolism in some insects.* HS Gour. Dr. (Mrs) Smita Banerjee.

5. Lalitha, S.V. *Studies on histochemical and histoenzymological aspects of the acanthocephalan parasite, Pallisentis ophiocerphali (Thapar, 1930) Baylis, 1933 parasitising fresh water fish, Channa striatus.* Osmania.

6. Masood Parveez Usman Shareef. *Some aspects of reproduction in the female apodan amphibian, Ichthyophis.* Karnatak. Dr. V.B. Nadkarni.

7. Michael, R. Dinakaran. *Studies on the immune response to bovine serum albumin in the lizard, Calotes versicolor.* Madurai.

8. Patro, U. Kedarenath. *Biochemical studies in the muscle and brain of the teleost, Ophiocephalus, Channa punctatus under various experimental conditions.* Berhampur. Dr. B.K. Patnaik.

9. Ravindra Kumari. *Histological, histochemical and biochemical investigations of the hypothalamo—hypophysealgonadal axis of Indian bull frog, Rana tinrina Daud after using a few selected drugs with particular reference to induced breeding.* Osmania.

Medical Sciences

1. Balaraman, R. *Some pharmacological investigations of cadmium.* Baroda.

2. Radhakrishnan, V. *Oro-intestinal responses in chronically food-deprived and hypothalamic damaged rats.* Delhi.

Veterinary Science

1. Sarma, Dilip Kumar. *Studies on the comparative immunity of fowl pox vaccines.* Punjab Agrl.

GOVERNMENT OF INDIA
MINISTRY OF SCIENCE & TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY

Require the services of suitable officers for the following vacant posts on deputation/transfer basis initially for a period of 2-3 years on usual deputation terms :—

1. **Director (3 posts)**
   (Pay Scale : Rs. 5100-150-5700-200-6300)
2. **Principal Scientific Officer (7 posts)**
   Pay Scale : Rs. 3700-125-4700-150-5000)
3. **Senior Scientific Officer (Grade-I) (7 posts)**
   (Pay Scale : Rs. 3000-100-3500-125-4500)
4. **Senior Scientific Officer (Grade-II) (3 posts)**
   (Pay Scale : Rs. 2200-75-2800-EB-100-4000)

ELIGIBILITY

1. For the posts of Director

Scientists or Technologists working in the Central/State Governments/Universities/Recognised Research Institutions/Semi-Government or Statutory or Autonomous Organisations in India or abroad;

(a) (i) holding analogous posts; or (ii) with 2 years' service in posts in the scale of Rs. 1800-2000 (pre-revised) or equivalent; or (iii) with 5 years' service in posts in the scale of Rs. 1500-2000 (pre-revised) or equivalent; and

(b) possessing the educational qualifications and experience as laid down below :—

Essential : (i) Master's degree in live Sciences, biochemistry, medical and veterinary sciences from a recognised University or equivalent.

(ii) 10 years' experience in Research and Development Industrial/Academic Institutions and/or Science and Technology Organisations out of which five years should be in a Managerial capacity for S & T programme, planning, development and Coordination.

Desirable : (i) Doctorate degree in the relevant subject or Master's degree in biochemistry, immunology or related subjects in live sciences from a recognised University or equivalent.

(ii) Experience in Technology Acquisition and Evaluation and Technology Transfer.

(iii) For BTIC Cell (Biotechnology Information Centre) experience in Computer-based information service would be preferred.

(iv) For the incumbent for production and R & D vaccines, actual experience of vaccine manufacturing or in the pharmaceuticals industry will be preferred.

(v) For the Indo-US Vaccine Action Programme (VAP) Cell, the experience of management and coordination of R & D in medical biotechnology will be preferred.

2. For the posts of Principal Scientific Officer

Scientists or Technologists working in the Government of India Ministries/Departments/Organisations.

(a) (i) holding analogous posts; or

(ii) with 5 years' service in posts in the scale of Rs. 3000-100-3500-125-4500 (Revised) or equivalent; and

(b) possessing the educational qualifications and experience as laid down below :

Essential : (i) Master's degree in live sciences or biochemistry, medical and veterinary sciences from a recognised University or equivalent.

Desirable : (i) Doctorate degree in the relevant subject or Master's degree in Micro-biology from a recognised University or equivalent.

(ii) Coordination policy and planning project development.

(iii) For the incumbent for production and R & D vaccines actual experience of vaccine manufacturing or in the pharmaceuticals industry will be preferred.

(iv) For the Indo-US VAP Cell the experience of management and coordination of R & D in medical bio-technology will be preferred.

(v) For Technology Mission on Oilpalm and Coconut, experience of plantation management will be preferred.

(vi) For S & T Project on Immunodiagnostics, experience in immunology development and patenting of immunodiagnostics Units.

3. For the posts of Senior Scientific Officer (Grade-I)

Scientists or Technologists working in the Government of India Ministries/Departments Organisations;

(a) (i) holding analogous posts; or

(ii) with 5 years' experience in the posts in the scale of Rs. 2200-75-2800-EB-100-4000 (Revised) or equivalent; and

(b) possessing the educational qualifications and experience as laid down below :

Essential : (i) Master's degree in live sciences or biochemistry or medical and veterinary sciences from a recognised University or equivalent.

(ii) 4 years' experience in Research and Development/Industrial/Academic Institutions and/or Science and Technology Organisations.

Desirable : (i) Doctorate degree in the relevant subject or Master's degree in Microbiology from a recognised University or equivalent;

(ii) Coordination policy and planning project development.

(iii) For the incumbent for production and R & D vaccines, actual experience of manufacturing or in the pharmaceuticals industry will be preferred.

(iv) For the Indo-US VAP Cell, the experience of management and coordination of R & D in medical biotechnology will be preferred.

(v) For S & T Project on Immunodiagnostics, experience in immunology, development and patenting of immunodiagnostics Units.

4. For the posts of Senior Scientific Officer (Grade-II)

Scientists or Technologists working in the Government of India Ministries/Departments/Organisations;

(a) (i) holding analogous posts; or

(ii) with 5 years' experience in posts in the scale of Rs. 2000-3500 or equivalent; and

(b) possessing the educational qualifications and experience as laid down below :

Essential : (i) Master's degree in live sciences or biochemistry or medical and veterinary sciences from a recognised University or equivalent.

(ii) 4 years' experience in Research and Development Industrial/Academic Institutions and/or Science and Technology Organisations.

(iii) Diploma in Computer Science.

Desirable : Doctorate degree in the relevant subject or Master's degree in Microbiology from a recognised University or equivalent;

(ii) Coordination, policy and planning project development.

(iii) For the incumbent for production and R & D vaccines, actual experience of vaccine manufacturing or in the pharmaceuticals industry will be preferred.

(iv) For BTIC Cell (Biotechnology Information System) experience of computer-based information service would be preferred.

(v) Experience in handling computer software, systems analysis and data processing.

DUTIES

1. For the post of Director

Assist in policy formulation, organise ways and methods to implement the plan schemes in the area of Technology Transfer; the respective areas with appropriate monitoring of the progress and co-ordination of activities in various organisations. Supervise the work and staff given to their charge.

2. For the post of Principal Scientific Officer

Assist in policy formulation, organise ways and methods to implement the plan schemes in the area of Technology Transfer; in the respective areas with appropriate monitoring of the progress and co-ordination of activities in various organisations. Supervise the work and staff given to their charge.

3. For the posts of Senior Scientific Officer (Grade-I)

Assist in policy formulation, organise ways and methods to implement the plan schemes in the area of Technology Transfer in the respective areas with appropriate monitoring of the progress and co-ordination of activities in various organisations. Supervise the work and staff given to their charge.

4. For the posts of Senior Scientific Officer (Grade-II)

To organise ways and methods to implement the plan schemes in the area of Technology Transfer, in the respective areas with appropriate monitoring of the progress and co-ordination of activities in various organisations. Supervise the work and staff given to their charge.

The eligible officers who are desirous of being considered for the above mentioned posts in the Department may send their application/bio-data in triplicate in the prescribed proforma **THROUGH PROPER CHANNEL** to the Under Secretary, Department of Biotechnology, Block-2, 7th Floor, CGO Complex, Lodi Road, New Delhi-110003 **within three weeks** from the Date of publication of this Advertisement. Applications received after due date and those without proper channel will not be considered.

PROFORMA

1. Name :
2. Father's Name :
3. Address :
   (a) Present : ....
   ....
   (b) Premanent : ....
   ....
4. Date of Birth :
5. Date of first joining the Govt. Service :
6. Date of retirement under Central/State Govt. Rules :
7. Marital Status :
8. Educational Qualifications
   (Year-wise details from Graduation onwards be given) :
9. Present post held :
10. Date from which present post held :
11. Scale of Pay and present Pay drawn :
12. Details of Service/Experience :

S. No.	Name of Post & Place of Posting	Name of the Employer	From	To	Scale of Pay	Nature of Duties

13. Additional Qualifications; if any.
14. Remarks.

Signature of the Candidate
(with Date)

CLASSIFIED ADVERTISEMENTS

BANASTHALI VIDYAPITH

Member : Association of Indian Universities.
Association of Commonwealth Universities.

Department of Computer Science

Readers—2 : Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in—(i) research (ii) innovation in teaching methods or (iii) production of teaching materials.

About 5 years of teaching and/or research or work experience in Computer applications provided that at least 3 years are as a Lecturer or in any equivalent position associated with Computer Systems.

OR

(i) Master's Degree in Computer Science or Master's Degree in any discipline with a diploma in Computer Science or Bachelor of Engineering in Computer Science/Electronics and Tele-Communications.

(ii) With 5 years experience in Computer System Development, Computer Programming and in conducting training programmes in Computer Science/Data Communications. Computer Systems Models and performance evaluation/ Software Engineering/Artificial Intelligence/Knowledge based Systems/Pattern Recognition/Digital Image Process/Micro Computer Architecture application, Computer graphics/excellent oral and written Communication ability.

Scale : Rs. 1200-1900 (to be revised).

Lecturers—2

(A) (i) II M.Tech. (Computer Science) or II M.E. (Computer Science) or II Master in Computer application (MCA) or II M.Sc. (Computer Science).

OR

(ii) I Master's Degree and I Post-graduate Diploma in Computer Science and Computer applications.

OR

(iii) II Master's Degree and II Post graduate Diploma in Computer Science and Computer Applications with one year experience.

(B) M.B.A. with specialization in Computer and Operation Research Techniques.

Scale : Rs. 700-1600 (to be revised).

Technical Assistant—1

Qualifications — MCA — Computer Science or B.Sc. I/High II with Diploma in Computer Science (DCA) or B.Sc. with Computer Science (three year Degree course).

Scale : 820-1550.

Revised : 1490-3050 Rajasthan Government grade.

Note : (1) Teachers must become habitual wearer of Khadi on appointment.

(2) Selection Committee may recommend higher start, higher grade in exceptional cases.

(3) Other things being equal, women candidates preferred.

(4) Second class return fare payable for interview.

Applications on plain paper giving complete details of academic qualifications, experience, proof of age and copies of marklists of all public examinations with postal order of Rs. 10/- must reach the Secretary, Banasthali Vidyapith, P.O. Banasthali Vidyapith (Rajasthan) 304022 within **15** days of the advertisement. No. 15/87.

PANJAB UNIVERSITY

CHANDIGARH

(Advt. No. 11/87)

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh,

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ASSOCIATION OF INDIAN UNIVERSITIES

AIU HOUSE, 16 KOTLA MARG, NEW DELHI-110002

Applications from Indian citizens are invited for the following post in the prescribed form available on payment of Rs. 2/- from the Office of the Association :

Research Officer

Pay Scale : Rs. 2200-4000 (Revised)

Qualifications

Essential : Good Master's Degree in Economics, Education or Social Sciences.

Desirable : Doctorate in Education or in Economics, with 5 years' experience in Research preferably in the area of Economics of Education.

Job Description

The incumbent will be responsible for handling research projects and organising seminars, conferences and workshops relating to university education.

Persons with experience of working in university level institutions will be preferred and can be considered on deputation terms.

The post carries Dearness and other allowances generally at the Central Government rates. Total emoluments at the initial of the Scale amount to Rs. 3256/-, including HRA and Special Allowance. Higher start in the prescribed pay scale may be given in deserving cases. Relaxation in any of the requirements may be made in exceptional cases. The post is for one year in the first instance but is likely to continue on a regular basis. The Association reserves the right not to fill up the vacancy advertised, if the circumstances so warrant. SC/ST/Ex-servicemen will be given preference. Canvassing in any form by or on behalf of a candidate will be a disqualification. Outstation candidates called for interview will be paid single second class rail fare to and fro by the shortest route.

Applications complete in all respects should reach the Office by **30 November 1987.** Persons already in service should apply through proper channel. Applications received after the last date or without complete information will not be entertained.

alongwith Postal Orders of Rs. 10/- by 20.11.1987. Fourteen days extra time is permissible to persons who have to submit their applications from abroad:

1. **Professors :** (Rs. 1500-60-1800-100-2000-125/2-2500)
    1. Psychology-1
    2. Geography-1
    3. Statistics-1
2. **Reader :** (Rs. 1200-50-1300-60-1900)
    1. Statistics-1
3. **Lecturers :** (Rs. 700-40-1100-50-1600)
    1. Geography-2
    2. Education-1

Note : 1. The Vice-Chancellor could place before the Selection Committee names of suitable persons for its consideration alongwith the applications received in response to the advertisement.

2. It is not obligatory on the part of the University to call for interview every candidate who possesses the essential qualifications.

3. The number of vacancies may change.

4. The University may also prepare a panel of suitable candidates for appointment against vacancies occurring within a specified period.

Detailed instructions, specializations, various allocations and reservations concerning the various posts and other details are available in the application forms. These can be obtained from the Cashier, Panjab University, Chandigarh, personally on payment of Rs. 2/- or by making a written request to the Assistant Registrar (Estt. 1), Panjab University, Chandigarh accompanied by self-addressed stamped (worth Rs. 3.40p.) envelope of 23 x 10 cms. and postal order of Rs. 2/- drawn in favour of the Registrar, Panjab University, Chandigarh.

NATIONAL INSTITUTE OF HYDROLOGY

JAL VIGYAN BHAWAN
ROORKEE

No. 22/1/87-NIH (ADMN)

Dated : 23-10-1987

CORRIGENDUM

The last date for the receipt of applications for the following posts in the National Institute of Hydrology, Roorkee which were advertised vide Advt. No. 6/87-NIH, Dated September 1, 1987 has been extended upto **30th November, 1987.**

1. Scientist 'E'
2. Scientist 'C'

Those who have already applied in response to the earlier advertisement, need not apply again.

INDIAN INSTITUTE OF SCIENCE

BANGALORE-560012

REQUIRES

Indian Nationals for the faculty positions at the level of **Assistant Professor** in the Department of Management Studies.

Essential : Ph.D./FIIM with specialization in the areas of Financial Management and Marketing Management and two years experience in teaching and/or research and/or industry. Should have strong analytical ability with proven capability for quantitative analysis demonstrated through published work.

Desirable : Candidate should have the flexibility and capability to participate in collaborative research with other faculty of the department in the areas of Resource Management in general and of Operations/Energy/Environmental/Water/R & D Management in particular.

Emoluments : Rs. 4,822/- p.m. in the Scale Rs. 3700-5700.

Details and prescribed application forms can be obtained on request accompanied by crossed IPO for Rs. 5/- drawn in tavour of the Registrar, Indian Institute of Science (SC/ST exempted on production of Caste/Tribe Certificate issued by a competent authority) and self-addressed, Rs. 5.40 stamped of 28 × 18 cm size before **16 NOVEMBER, 1987.**

R(IA)/308/44/87

REGISTRAR

UCHCHA SIKSHA AUR SHODH SANSTHAN

POST GRADUATE AND RESEARCH COMPLEX : HYDERABAD DAKSHINA BHARAT HINDI PRACHAR SABHA

Advt. No. 9/87-88

Applications are invited in the prescribed form for the following post on or before 25.11.87 on the following address : REGISTRAR, POST-GRADUATE AND RESEARCH COMPLEX, DAKSHINA BHARAT HINDI PRACHAR SABHA, POST BOX No. 82, KHAIRATABAD, HYDERABAD—500 004.

Professor of HINDI

Scale of Pay : Rs. 1500-2500+Usual Allowances.

Qualifications : An eminent Ph.D. with published work of high quality, actively engaged in research in Hindi Linguistics. 10 years experience of Teaching and Research. Experience of guiding research at Doctoral level.

OR

An Outstanding scholar with established reputation who has made significant contribution to knowledge.

Desirable Qualification : The applicant should be able to provide leadership and orientation to studies in comparative Literature, Contrastive Linguistics and Functional Hindi. Knowledge of South Indian Languages is preferred.

Applications can be had from the Registrar by sending Postal Order of Rs. 5/- with self-addressed Cover.

V. Anjaneya Sarma
REGISTRAR

INDIAN VETERINARY RESEARCH INSTITUTE

IZATNAGAR : U.P.

Advt. No. 4/87-MRDPC

Applications addressed to the Asstt. Registrar (MRDPC), IVRI, Izatnagar-243 122 are invited for recruitment to the following posts at this Institute, under the administrative control of the ICAR. The posts are temporary but likely to continue.

Candidates fulfilling the required eligibilities should apply giving full particulars, on plain paper, in the format given below, within 15 days from the date of advertisement. Candidates serving in Govt./Semi Govt. /Autonomous Organisations should apply through proper channel. The posts are pensionable but non-government. The Head quarters of the posts will be at Izatnagar/Mukteshwar (Kumaon) for the present, but the appointees will be liable to serve in any Institute of the ICAR/IVRI located anywhere in India. Applications, incomplete, in any respect or received after the due date will not be entertained nor any correspondence on the subject will be entertained.

1. T-II-3 (Foreman Mechanical) One post, Rs. 1400-2300 (Reserved for SC).

Qualifications

Essential—(i) Three years Diploma/Bachelor's Degree in Agricultural Engineering / Automobile Engineering/ Mechanical Engineering.

(ii) Atleast three years' experience in Repair, Maintenance and Overhauling of various types of Tractors' Diesel Engines and Agricultural machines in large agricultural workshop for diploma holders.

OR

Higher certificate in relevant field mentioned above with five years experience in the above field.

2. T-II-3 (Computer Operator), One post: Unreserved, Rs. 1400-2300.

Qualifications

Essential—(i) Three years Diploma/ Bachelor's Degree in any discipline with knowledge of computer operation and console work or equivalent qualification.

(ii) Atleast three years experience in the relevant field (in a Research Organisation/University) for diploma holders.

Desirable—(i) Experience of data entry on key to floppy machine.

(ii) Familiarity with computer operation on Micro-32 computer system or similar system.

(iii) Knowledge of computer programming.

3. T-II-3 (F.S. Breeding), One post, Rs. 1400-2300, Reserved for ST but SC may also apply.

Qualifications

Essential—(i) Three years Diploma/ IDD/Bachelor's degree in Agriculture with Animal Husbandry.

(ii) Atleast three years experience of working in a Livestock farm for diploma holders.

Desirable—Working experience in a Livestock farm for Bachelor's degree holders.

4. Staff Nurse, Three posts (Two unreserved and one reserved for ST) Rs. 1200-2040

Qualifications

Essential—(i) Matriculate or its equivalent.

(ii) Should possess the certificate of Registration in "General Nursing and Midwifery" as prescribed by the Central/ State Government having a minimum of two years experience of a Nurse in a recognised Hospital/Organisation.

Desirable—(i) Five years experience as Midwife.

(ii) Diploma in General Nursing and Midwifery.

(iii) Two years experience of Nursing in a Government/Semi-Government Hospital.

Note : In fields where the duration of diploma courses available in the country is only two years, the minimum qualification will be two years diploma instead of three years diploma.

The candidates already employed should apply through proper channel or furnish a 'NO OBJECTION CERTIFICATE' from their employer.

The number of posts can increase or decrease. T.A. will be paid to unemployed SC/ST candidates as per rules applicable. The prescribed educational qualifications are the minimum and mere possession of the same do not entitle candidates to be called for interview. When the number of applications received in response to this Advertisement is larger and it will not be convenient or possible for the Institute to interview all the candidates, it may restrict the number of candidates for interview to a reasonable limit on the basis of qualification and experience higher than the minimum prescribed in the Advertisement or by holding a screening test. The unemployed candidates for the post of Staff Nurse should be registered with the respective Employment Exchanges or Boards and the registration should be valid upto the date of interview.

Candidates must write the name of the post and Advertisement Number in CAPITAL LETTERS on the top of the envelope.

Age Limit : 18 to 30 years for the posts from Sl. No. 1 to 3 and 18 to 25 years for the post at Sl. No. 4. (Relaxable for SC/ST/PH/Ex. SM as per rules and no age limit for ICAR employees. Crucial date for determining the age limit shall be the last date for receipt of application from the candidates.

FORMAT

Advt. No. 4/87-IVRI

APPLICATION FOR THE POST OF————————————————

1. Name in full (in capital letters)
2. Father's/Husband's Name :
3. Present Postal Address :
4. Permanent Address :
5. Place & Date of Birth :
6. Age on closing date of Advt. :
7. Nationality : Sex :
8. Name of Employment Exchange :
   (i) Registration No.
   (ii) Valid upto
9. Category which he/she belongs i.e. SC/ST/PH/Ex-Servicemen/General :
10. Details of attested/photostat copies :
11. Qualification :

Pass Port size recent photograph should be affixed here

Name of Exam.	Name of Board/Univ.	Class or Division	%	Year	Subjects

12. If employed, give following particulars :

Name of employer	Designation	Pay Scale & Salary drawn	Nature of employment Temp./Q.P./Permanent	Date of joining	Date of leaving

I hereby declare that all the statements made above are true, complete and correct to the best of my knowledge and belief.

I also declare that (i) I have never been punished or debarred from Govt. (Central/State), autonomous organisations and ICAR service, (ii) I have not been convicted by a Court of Law for any offence. In the event of any information being found false or incorrect or ineligibility being detected at any time before or after the examination/interview, action may be taken against me, and I shall be bound by the decision of the Employer.

Signature of Candidate

Dated the :

HIMACHAL PRADESH UNIVERSITY

'RECRUITMENT BRANCH'

Advertisement No. 4/87

Applications are invited (on prescribed form) for the following posts so as to reach the **Section Officer, Recruitment Branch, H.P. University, Shimla-171005** by the **17th November, 1987** alongwith a Crossed Indian Postal Order of Rs. 20/- (Rs. 10/- for SC/ST) payable to the Finance Officer :

I. **Professors :** Plan posts, likely to continue (Pay Scale : Rs. 1500-2500) in the following subjects of Postgraduate Centre :

ENGLISH-1, PUB. ADMN.-1, MUSIC-1.

II. **Readers :** Plan posts likely to continue (Pay Scale : Rs. 1200-1900) in the following subjects of Postgraduate Centre :

PUB. ADMN.-1, STATISTICS-1, JOURNALISM-1, YOGA-1, COMPUTER SCIENCES-1.

Essential Qualifications

I. **For Professor :** An eminent scholar with published work of high quality actively engaged in research. Ten years experience of teaching and/or research. Experience of guiding research at Doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

II. **For Reader** : Good academic record with a Doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

Candidates already in service should send their applications through proper channel. An advance copy, however, may be sent direct.

Candidates called for interview will have to come to the place of the interview at their own expenses and bring with them their original research papers, degrees, and certificates, etc. for verification.

The University reserves the right to negotiate with suitable person or persons, if necessary, who may not have applied formally.

The University also reserves the right to fill up or not to fill up the posts or to call only selected candidates for interview. The number of posts likely to be filled may vary.

Application form can be obtained from the **Section Officer, Recruitment Branch, H.P. University, Shimla-171005,** personally on payment of Rs. 5/- or by making a written request to him accompanied by self-addressed envelope of 23 x 10 cms. with postage stamps affixed worth Rs. 1.40 ps., and a postal order of Rs. 5/- drawn in favour of the Finance Officer, H.P. University, Shimla-171005.

Note : (i) Applications received on plain paper, applications not in confirmity with the requirements as specified in the application form and applications received after the due date will not be entertained, and no correspondence will be entertained in this regard.

(ii) A person applying for more than one post should send a separate application for each post.

A.R. Chauhan
REGISTRAR

INDIAN INSTITUTE OF SCIENCE

BANGALORE-560 012

REQUIRES

Following in the Computer Centre under the Super Computer Project.

1. SENIOR SCIENTIFIC OFFICERS

(2 Posts) (A/308/42/87)

Essential : ME in Electrical/Electronics/Communication/Computer Science with 3 years experience in Systems Software Development/ maintenance of large computers **OR** PhD in Computer Science/Engineering with demonstrated ability in developing large programs **OR** PhD in Science with 3 years post-doctoral experience in Systems Programming/application program development.

Desirable : Experience in Computer Graphics or Computer Networking or Computer Operating Systems. Development of Graphics Oriented Algorithms, Numerical Algorithms and Vectorization.

2. SCIENTIFIC OFFICERS

(4 Posts) (A/308/43/87)

Essential : ME in any discipline **OR** PhD Science with aptitude in programming/demonstrated ability in development of large systems programs.

Desirable : Experience in Computer Graphics or Computer Networking or Computer Operating Systems. Development of Graphics oriented Algorithms, Numerical Algorithms and Vectorization.

Emoluments : Post 1 : Rs. 3,964/- p.m. in the grade Rs. 3000-4500; Post 2 : Rs. 2,926/- p.m. in the grade Rs. 2200-4000.

Details and prescribed application forms can be obtained on request (separate for each post) accompanied by crossed IPO for Rs. 5/- drawn in favour of the Registrar, Indian Institute of Science (SC/ST exempted on production of Caste/Tribe Certificate issued by a competent authority) and self-addressed, Rs. 5.40 stamped envelope of 28x18 cm size **before 16 November 1987**.

REGISTRAR

BANARAS HINDU UNIVERSITY

(Advertisement No. 4/1987-88)

APPLICATIONS are invited for the undermentioned posts. The benefit of Provident Fund/Pension, Dearness Allowance and City Compensatory Allowances are admissible according to University rules. The retirement age of the University Employees is 60 years. The appointment will be made on one year probation on all permanent posts. Higher starting salary within the grade is admissible to specially qualified and experienced candidates.

Applications will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal Orders of Rs. 10/- (of Rs. 2.50 for the candidates belonging to Scheduled Caste/Scheduled Tribes category) in favour of the Registrar, BHU towards application fee. Application form alongwith detailed qualifications will be supplied on receipt of crossed I.P.O./Bank Draft of Rs. 2/- in favour of the Registrar, BHU & self-addressed envelope of 23 cm x 10 cm size carrying stamps of Rs. 1.80. Candidates called for interview for these posts will be paid actual Railway fare by the Second Class plus reservation charges for sleeper, if paid, and/or actual Bus fare from the present residence bothways by the shortest route as per University rules. No other expenses will be paid.

Applications for each post be sent separately alongwith attested copies of certificates and marksheets in support of the qualifications and experience mentioned in the application and be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 INDIA.

Incomplete application in any respect will not be entertained for consideration. Those who are in service should apply through proper channel. Money Order or Cheque will not be accepted towards application fee.

Reservation : (1) A reservation of 15% in the case of Scheduled Castes and 7½% in the case of Scheduled Tribes will be made in the category of teaching posts upto the level of lecturers only. (2) A reservation of 22½% (15% S.C. and 7½% S.T.) will be made in the category of non-teaching posts at entry level.

The last date for receipt of application in the Office of the Registrar (Selection Committee Section), Banaras Hindu University either by post or by hand will be **DECEMBER 10, 1987**. Applications will be received by hand at the Counter only upto 2.30 P.M. on each working day till the last date. No application shall be entertained after the last date from external, in-service employees and the candidates residing abroad.

Note : 1. Number of vacancies are tentative and can vary according to needs.

2. Those who have already applied timely for the posts shown at serial numbers 5, 6, 9 to 12, 14, 15, 17 to 21, 26, 27, 31, 34, 38 to 43, 45, 46 and 51 to 56 in response to our earlier advertisements need not apply again. However, they may send 10 copies of their latest biodata for consideration.

Grades

Professor– Rs. 1500-60-1800-100-2000-125/2-2500 (pre-revised).

(N.P.A. Rs. 600/-p.m. to Medical Graduates appointed in the Institute of Medical Sciences).

Reader–Rs. 1200-50-1300-60-1900 (pre-revised*).

Lecturer–Rs. 700-40-1100-50-1600 (pre-revised*).

*(N.P.A.—50% of pay subject to maximum of Rs. 500/- p.m. to Medical Gra-

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ANNAMALAI UNIVERSITY
ANNAMALAINAGAR

55th Annual Convocation–1987

Convocation for conferring Degrees, Titles and Diplomas will be held at Annamalainagar during the Second Week of December, 1987.

Filled in applications from candidates for taking degrees and titles **In Person/In Absentia** must reach the Registrar on or before **20th November, 1987.** Printed forms of applications can be obtained by sending a self-addressed envelope affixing 0.60p stamp.

Post Graduates, Professional and Research degree holders and Prize Winners in all other degrees are alone given the option for taking their degrees "**In Person**". All the rest are required to apply for taking degrees "**In Absentia**".

Correspondence Courses

Those who have not already submitted their applications for the degree/diploma (In Absentia) may submit the same before **20th November, 1987**.

R. Rajamanickam
REGISTRAR

duates appointed in the Institute of Medical Sciences only).

Other Posts—As indicated against the posts.

INSTITUTE OF MEDICAL SCIENCES

1. **Professor of Ophthalmology** (One)
2. **Professor of Anatomy** (Neuroanatomy) (One)
3. **Reader in Anatomy** (Histology) (One)
4. **Reader in Clinical Psychology** (One) (Dept. of Psychiatry)
5. **Reader in Biochemistry** (Reproductive Biochemistry) (One) (Earlier Advt. No. 11/1984-85, No. 2/1985-86 and No. 7/1985-86).
6. **Reader in Skin & V.D.** (One) (Earlier Advt. No. 2/1985-86)
7. **Lecturer in Molecular Biochemistry** (One)

S.S. HOSPITAL

8. **Medical Officers** (Eleven)

Grade: Rs. 700-1600 plus N.P.A. as admissible under rules.

INSTITUTE OF TECHNOLOGY

9. **Professor of Pharmacognosy** (Spl. in Pharmacognosy) (One) (Earlier Advt. No. 3/1984-85 and No. 2/1985-86).
10. **Professor of Mechanical Engg.** (Industrial Management) (One) (Earlier Advt. No. 12/1984-85 and No. 2/1985-86).
11. **Professor of Mechanical Engg.** (Thermal) (One) (Earlier Advt. No. 2/1985-86).
12. **Reader in Mechanical Engg.** (Production Engg.) (Three) (Earlier Advt. No. 12/1984-85 and No. 2/1985-86).
13. **Lecturer in Humanities** (One)

Note : The candidates should possess Degrees in Economics/Sociology/Psychology.

INSTITUTE OF AGRICULTURAL SCIENCES

14. **Irwin Professor of Agricultural Sciences** (One) (Earlier Advt. No. 4/1978-79, No. 6/1983-84 and No. 2/1985-86).
15. **Professor of Genetics & Plant Breeding** (One) (Earlier Advt. No. 2/1985-86).
16. **Reader-cum-Breeder** (One) (under All India Coordinated Research Project on Oilseeds)—Dept. of Genetics & Plant Breeding.
17. **Reader in Agricultural Statistics** (One) (Earlier Advt. No. 9/1979-80, No. 6/1983-84 and No. 2/1985-86).
18. **Reader in Physics & Mathematics** (One) (Earlier Advt. No. 13/1982-83, No. 6/1983-84 and No. 2/1985-86).
19. **Lecturer in Agricultural Statistics** (One) (Earlier Advt. No. 13/1981-82, No. 20/1981-82, No. 6/1983-84 and No. 2/1985-86).
20. **Lecturer in Physics** (One) (Earlier Advt. No. 20/1981-82, No. 6/1983-84 and No. 2/1985-86).
21. **Lecturer in Mycology & Plant Pathology** (Spl. in Virology) (One) (Earlier Advt. No. 2/1985-86).

FACULTY OF ARTS

22. **Reader in History of Arts** (Iconography/Western Art History) (One)
23. **Reader in Journalism & Mass Communication** (Spl. in Communication Research, preparation of teaching materials, seminars & publication) (One)
24. **Lecturer in Bengali** (One) (Dept. of Bengali)
25. **Lecturer in Bengali** (One) (Mahila Mahavidyalaya)
26. **Lecturer in Arabic** (One) (Earlier Advt. No. 13/1982-83, No. 6/1983-84 and No. 2/1985-86).
27. **Assistant Librarian** (One) (Dept. of Journalism & Mass Communication) (Earlier Advt. No. 2/1985-86).

Grade : Rs. 700-1600.

SANSKRIT VIDYA DHARM VIGYAN SANKAY

28. **Reader in Vyakaran** (One)
29. **Lecturer in Vyakaran** (One)
30. **Lecturer in Veda** (One)
31. **Lecturer in Mimansa** (One) (Earlier Advt. No. 2/1985-86)

FACULTY OF SOCIAL SCIENCES

32. **Reader in History** (One)
33. **Lecturer in Economics** (One) (Mahila Mahavidyalaya)

FACULTY OF SCIENCE

34. **Professor of Statistics** (One) (Earlier Advt. No. 2/1985-86)
35. **Professor of Zoology** (One)
36. **Reader in Zoology** (Cell Physiology/Biochemistry) (One) (Centre of Advanced Study in Zoology—Dept. of Zoology)
37. **Reader in Zoology** (One)
38. **Reader in Biochemistry** (Spl. in Metabolism, Neurochemistry, Membranse or Enzymology) (One) (Earlier Advt. No. 2/1985-86)
39. **Reader in Computer Science** (Two) (Earlier Advt. No. 2/1985-86)
40. **Reader in Mathematics** (One) (Earlier Advt. No. 2/1985-86)
41. **Reader in Chemistry** (Physical) (One) (Earlier Advt. No. 2/1985-86)
42. **Lecturer in Chemistry** (Physical) (One) (Earlier Advt. No. 2/1985-86)
43. **Lecturer in Chemistry** (Analytical) (One) (Earlier Advt. No. 2/1985-86)
44. **Lecturer in Chemistry** (One) (Mahila Mahavidyalaya)
45. **Lecturer in Physics** (Two) (Earlier Advt. No. 2/1985-86)
46. **Lecturer in Mathematics** (One) (Mahila Mahavidyalaya) (Earlier Advt. No. 2/1985-86)
47. **Lecturer in Zoology** (Two) (Mahila Mahavidyalaya)
48. **Lecturer in Geography** (One) (Mahila Mahavidyalaya)

FACULTY OF PERFORMING ARTS

49. **Reader in Instrumental Music** (Sitar) (One)
50. **Reader in Musicology** (One)

CENTRAL LIBRARY

51. **Deputy Librarian** (One) (Earlier Advt. No. 2/1985-86)

FACULTY OF COMMERCE

52. **Reader in Commerce** (Two) (Earlier Advt. No. 3/1983-84, No. 6/1983-84, No 2/1985-86 and No. 3/1985-86)
53. **Lecturer in Commerce** (One) (Earlier Advt. No. 3/1983-84, No. 6/1983-84 and No. 2/1985-86).

FACULTY OF MANAGEMENT STUDIES

54. **Placement Officer** (One) (Earlier Advt. No. 2/1985-86)

Grade : Rs. 1100-1600.

55. **Case Analyst** (One) (Earlier Advt. No. 2/1985-86)

Grade : Rs. 700-1300.

56. **Lecturer in Management Studies** (Six) (Earlier Advt. No. 3/1985-86).

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055. Tel. 529157

16-11

University News

MONDAY, NOVEMBER 9, 1987 Rs. 1.50

Shri Morarjibhai Desai, Chancellor of the Gujarat Vidyapith, presenting degrees to the students at the 38th Convocation of the Vidyapith. Seated on his left is Prof. Ramlal Parikh, Vice-Chancellor

SCHOOL OF CORRESPONDENCE COURSES

ANDHRA UNIVERSITY—VISAKHAPATNAM-530 003.

ENTRANCE EXAMINATION NOTIFICATION—JANUARY 1988

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Applications are invited from the candidates residing in India for Entrance Examination for admission into I year B.A./B.Com. degree course through the School of Correspondence Courses.

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Applications will be issued from 10th November, 1987. Duly filled-in applications should reach this office on or before **21-12-87**. Applications received after the due date of 21-12-87 will be accepted on payment of penal fee at the following rates :

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Upto 31.12.87 (between third and tenth day)	. . . Rs. 10/-

Applications received after 31.12.87 will not be accepted even with penal fee.

Under modified scheme of Entrance Examination, there will be four papers of one hour duration each and the examination will be conducted in two sessions **on Sunday, the 24th January, 1988** from 9.00 a.m. to 11.00 a.m. and from 2.00 p.m. to 4.00 p.m. Examination will be conducted in one centre in each district in Andhra Pradesh besides the existing centres in Andhra and Nagarjuna University jurisdiction.

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The prescribed application forms, syllabus and model question papers are also available at our following Study Centres on payment of Rs. 10/- through Demand Draft : 1. Govt. College, Srikakulam ; 2. M.R. College, Vizianagaram; 3. Mrs. A.V.N. College, Visakhapatnam; 4. Govt. College, Rajahmundry; 5. P.R. Govt. College, Kakinada ; 6. Sir C.R. Reddy College, Eluru; 7. S.R.R. & C.V.R. Govt. College, Vijayawada ; and 8. A.C. College, Guntur.

The School has no agents and takes no responsibility for the prospectus issued and promises made for admission by any other institution.

Note : The applicants should clearly mention whether they require Entrance Examination application form either for B.A. or B.Com.

Waltair
Dated : 24.10.87

Prof. V. Abraham
DIRECTOR

UNIVERSITY NEWS

VOL. XXV NOVEMBER 9
No. 45 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor :
SUTINDER SINGH

Selecting a Vice-Chancellor

S. Muthukumaran*

1. Introduction

1.1 No organisation can ever be better than what its Chief Executive wants it to be. What the chief executive wishes the organisation to achieve, has therefore the most decisive effect on its future. Achievements are always less than or equal to what one wishes to achieve. An organisation be it an industry or a University will naturally at best be, as good as what the organisation (guided and led by its Chief Executive) wishes to accomplish. As the choice made in the appointment of the Chief Executive will eventually affect the future of the organisation, those that are given the privilege of making the appointment have a great responsibility. If the appointment is in respect of a public sector undertaking or an autonomous body, the responsibility becomes even greater, as the choice may ultimately result in the organisation showing a performance ranging anywhere from a desirable steady rate of growth and stability, to irretrievable deterioration affecting the lives of a large section of the general public.

2. The Vice-Chancellor as Head of the University

2.1 In a University set up, the Vice-Chancellor is the Chief Executive and the Principal Academician. He is required to exercise general supervision over all the activities of the University. He should provide guidance for enlarging and enriching the deliberations at the meetings of all the authorities of the University. He should give effect to the decisions of all its authorities. He is the ex-officio Chairman of the Senate, the Syndicate and the Academic Council i.e. he is the Chairman of the policy making body, the executive body and the body laying down academic standards. In the absence of the Pro- Chancellor/Chancellor, he should preside over the convocation called for conferring various degrees. It is his duty to see that the provisions of the Act, the Statutes, the Ordinances, the Regulations and the Rules are fully observed. He should be capable of exercising judiciously the powers vested in him to discharge these duties efficiently and effectively.

2.2 The nature of the work and responsibilities of a Vice-Chancellor are so varied and taxing that the following observations made by Warren Bennis (Warren Bennis 1976) aptly describe the qualities required of him without exaggeration :

> "A College President (the equivalent of a Vice-Chancellor of an Indian University) should be born with the physical stamina of a Greek Athlete, the cunning of a Machiavelli, the wisdom of a Solomon, the courage of a lion if possible, but above all, the stomach of a goat."

3. Mode of Appointment

3.1 The UGC Committee on "Governance of Universities and Colleges" (UGC, 1971) has in its report, after considering several alternatives, recommended that the Vice-Chancellor may be appointed by the Visitor (or Chancellor) from amongst a panel of names submitted by a committee especially constituted for the purpose. The UGC Committee has suggested the following alternatives:

---

* *Professor and Registrar, Anna University, Madras 600 025.*

Pattern I

a. A nominee of the Visitor (or Chancellor)
b. Two nominees of the Executive Council (or Syndicate)

Pattern II

a. A Nominee of the Visitor (or Chancellor)
b. A nominee of the Chairman, UGC
c. A nominee of ths Executive Council (or Syndicate)

Pattern III

a. A nominee of the Visitor (or Chancellor)
b. A nominee of the Chairman, UGC
c. Three nominees of the University one of whom may be nominated by the Academic Council and the other two by the Executive Council (or Syndicate). Alternatively one to be nominated by the Executive Council (or Syndicate) and the other two by the Academic Council.

The person or persons to be nominated by the Executive Council (or Syndicate) and other authorities of the University may not be the employees of the University or the members of the Executive Council (or Syndicate) or Academic Council.

The committee should prepare the panel, arrange it in an alphabetical order and need not indicate any preference.

4. DUTIES AND FUNCTIONS OF THE VICE-CHANCELLOR

4.1 To Supervise the affairs of the University

The person to be appointed to the position of Vice-Chancellor must be equal to the requirements of the job. He must be capable of working as the Chief Executive and Principal Academician of the University. As the Chief Executive he must be capable of generally supervising all the activities of the University which include:

—Research and Teaching in the University Departments
—Teaching and Research in the affiliated and Constituent Colleges/Schools
—Selection of Teachers
—Selection of non-teaching staff
—Selection of students for various courses
—General Administration
—Conduct of Examinations
—Evaluation and declaration of results of the Examinations
—Management of the Finances of the University
—Preparation of Accounts of the University
—Execution of new works
—Maintenance of the properties and buildings of the University
—Maintenance of discipline among the teachers and staff as well as the students
—Development activities of the University including purchase of equipments, appointment of University staff, construction of new buildings, starting of new courses/programmes
—Interaction with the public and the Press/Media
—Rapport with the fund providing organizations/State Government Departments/UGC/Government of India, Departments of Education, Science and Technology, etc., Planning Commission.

4.2 Principal Academician

As the Principal Academician, he should not only make arrangements to provide and maintain suitable academic programmes, the required equipments, labs, lecture halls, library but also constantly strive to improve the curriculum of the various programmes, that are offered by the University. He should be able to inspire the Chairmen of all the Boards of Studies to periodically review and constantly think about improvements to the syllabi of the various programmes. This means that he must be able to encourage everyone of the members of the Boards of Studies to participate in the task of preparing and reviewing the syllabi. The teachers of the University must be made to feel the responsibility for offering useful and relevant programmes in the most effective manner for the benefit of the student community.

4.3. To Preside over the meetings of various authorities

The Vice-Chancellor must be capable of presiding over the meetings of the various authorities of the University. The Senate, the Syndicate and the Academic Council consist of a number of persons including teachers of the University, Government officials and others representing various interests. As the interests of the various persons in each one of these bodies differ, it is likely that each one of the individual members may look at any issue (that is before the authority) from his own particular stand point thereby leading to certain amount of conflict. The Vice-Chancellor must be capable of resolving such conflicts and at the same time guide the deliberations keeping in view the interest of the University. He must have the capacity to look into every problem in detail and find solutions which are in the best interest of the University. He must be in a position to sell such solutions to the various authorities which have the power to decide on the respective issues, without ever appearing to be thrusting such solutions on them. Every member of every authority taking the decision must feel that he was responsible for the decision taken. As a matter of fact, several members must feel that it is their idea.

4.4. To Implement Decisions of the Authorities

The Vice-Chancellor is expected to give effect to everyone of the decisions taken by the competent authorities. Therefore, he must be capable of executing the decisions. It is not that he should himself execute each of the decisions. He has to give effect to the decisions through the officers of the university. He should exercise constant vigil over the work of the officers and see to it that the decisions once taken are implemented satisfactorily and expeditiously by everyone who is delegated the responsibility and authority to implement such decisions.

4.5 To Conduct Examinations

One of the main functions of the University is to conduct examinations, evaluate the performance of the students, declare those that satisfy the minimum criteria to be eligible for receiving the degrees and conferring the degrees in a convocation especially called for this purpose. In recent years, the number of courses offered in each discipline has increased enormously. The number of examinations to be conducted by a University, runs into thousands. The number of candidates taking these examinations is also very large. This is an onerous responsibility which the Vice-Chancellor must bear with the active support of the Controller of Examinations and/or Registrar.

4.6. To Maintain Discipline

As the Chief Executive he should regulate the conduct and duties of the employees, should make the rules necessary and should ensure observance of all the statutory requirements. In other words, he should see that the provisions of the Act, the Statutes, the Ordinances, the Regulations and the Rules are observed in the University by everyone concerned. This also means that a strict discipline is to be maintained in the University. Above all, he should maintain strict discipline himself so that he will be a model for other employees to follow. One of the problems that is associated with maintenance of discipline is the necessity to take disciplinary action against the erring employees. At present, the provisions under the various Statutory Acts are such that it requires a great deal of determined effort on the part of one who is responsible to maintain the discipline to see that those erring employees are advised and persuaded to change their conduct for the better and if necessary, to punish them. This task is an unpleasant one and it requires certain amount of maturity to maintain discipline without being unpleasant.

4.7 Growth and Development of the University

The Vice-Chancellor is expected to encourage the staff members to prepare reports, project proposals, plans for the future and to get their proposals and development plans approved, so that the University is able to keep up the existing programmes and at the same time, to develop and grow in all the relevant areas. It is not enough if the Vice-Chancellor is able to draft development plans and research proposals. He should encourage the staff members at various levels to identify themselves with the growth and development of the institution and make them strive to prepare and push through development and research proposals. He should inspire his senior colleagues as well as junior colleagues by everyone of his actions. He should create a confidence among the staff that hard work will earn the necessary rewards and recognition.

4.8 Leadership and Creativity

As the principal academician, the Vice-Chancellor should lead the University and not just manage it. It is not enough if he handles with ability the day to day work, he should also ask himself whether the routine work needs be done at all by him. The Vice-Chancellor himself should not spend much of his time on the routine work. He should have around him a group of individuals who will take care of the routine work and would know more than what the Vice-Chancellor knows in regard to everything within their own areas of responsibility but will always discriminate and keep the Vice-Chancellor informed of anything he is expected to know. The Vice-Chancellor himself may spend most of his time on what needs to be done for the future and what is to be done in the future. It is not enough if he spends time thinking about the forces that will affect the future of the institution; but he must educate his colleagues as well as the members of the Syndicate about the necessity to create for the institution clear-cut and measurable goals. He must be creative and at the same time should encourage the faculty and the students to be creative.

4.9 Advancement and Dissemination of Knowledge

Apart from creating an atmosphere conducive to research and encouraging the faculty members to pursue research activities, the Vice-Chancellor is also expected to disseminate knowledge by undertaking various activities in the University. These may be in the form of publications, organising seminars, short courses and the like. He may also have to cooperate with other Universities and institutions which have similar objectives.

4.10 Concern for the Welfare of the Staff and Students

The Vice-Chancellor must have certain humane qualities. He should look at the faculty members and other employees as well as the students as individuals. He should be able to understand that each individual has his own aspirations and for him, his welfare, his progress and his development are more important than anything else. Even though, the Vice-Chancellor as a Chief Executive will have to place the interests of the University above the interest of the individuals and be prepared to sacrifice the interest of an individual when interfering with or working at cross purposes to the general interests of the University; but yet, he should at the same time identify himself with the aspirations of the teachers as well as the non-teaching staff and the students and should show a genuine concern for the welfare of the individuals, who constitute the University. He should show a proper understanding of the genuine grievances of the employees.

5. THE STAGES IN THE DEVELOPMENT OF A UNIVERSITY

5.1 Every organisation passes through several stages of existence during its life time. These stages may include :

1. Phase of Establishment
2. Phase of Growth
3. Phase of Consolidation
4. Phase of Planned expansion and steady development
5. Phase of Deterioration

The last stage mentioned above is one that is not desired. Every organization wishes to thrive as long as possible without reaching the last stage. There are also occasions when due to certain circumstances beyond the control of the organization, there had been set backs in certain areas or activities, such as

—Academic Programmes
—Examinations
—Development
—Administration
—Finance

If there is a set back in any one or a combination of the above areas, it is appropriate that when there is a chance to choose a new executive head, efforts will be made to identify for appointment a person who will be able to meet the situation and combat the set back. In everyone of the stages listed the qualities that are expected of the head differs. Depending upon the immediate past history and the immediate proposed future, different types of qualities and abilities may be expected out of the Chief Executive. This is the reason why in every one of the Acts establishing the various Universities, no specific qualities or qualifications are enumerated as requirements for filling the position of the Chief Executive, namely, the Vice-Chancellor. It will be the duty of the committee constituted for the preparation of the panel of names for consideration of appointment to the post of Vice-Chancellor, to take into consideration the various aspects mentioned in the foregoing before it comes out with the panel of names.

6. The Task of the Committee

6.1 The committee may have to deliberate in detail :

—the objects, powers and jurisdiction of the university of which the Vice-Chancellor is the Chief Executive and Principal Academician
—the duties and functions of the Vice-Chancellor as enumerated in the Statutes/Act
—the progress that has been made by the University
—the problems that it has been facing in the recent past
—the programme of its future growth

—the problems that it may be facing in implementing the future programmes.

Such deliberation will make it possible for the committee to identify the competencies especially required and the type of qualities that are expected out of a person who should be appointed as the Vice-Chancellor. It may not be enough for the committee to collect bio-data of some persons, meet once to deliberate for a few minutes on the various names and the bio-data, that were collected by the committee members and decide on three names for submitting to the Chancellor/Visitor. The committee should prepare a detailed report based upon consultation with such of those who have an intimate knowledge about the institution and deliberate as long as is necessary on suitable names of persons, who have the capacity to undertake the job and work in the best interests of the institution. The Committee should not think that they are conferring an honour on someone by including his name in the panel and should not consider a name based on certain type of work done in the past either in the area of research or in the area of teaching and the like. The whole issue must be considered in totality and a proper perspective be formed in choosing a person who is capable of meeting the challenges of the job both on short and long term basis and also one who is willing to spare his services for the cause of maintenance and development of the various activities of the University, consistent with its objectives and in its best interests.

7. Summary and Conclusions

7.1 The position of Vice-Chancellor is a unique one in several respects. The Vice-Chancellor is both the Chief Executive and Principal Academician. His functions are so varied that one who is appointed to this position, should have or should develop several competencies. It is rightly observed in the report of the committee on Higher Education under the chairmanship of Lord Robbins (as quoted in the report of the Committee on Model Act for Universities, Ministry of Education, 1964) that no other enterprise would impose on its executive head the variety and burden of work that a modern university requires of its Vice-Chancellor.

7.2 The Vice-Chancellor should be able to

—lead the faculty members of the University as well as the teachers of the affiliated/constituent institutions - (all of them highly educated in their respective field);

—conduct effectively and usefully the deliberations of the meetings of the authorities of the University;

—implement the decisions of the authorities through willing co-operation of dedicated officers of the university;

—assume the onerous responsibilities of conducting a large number of examinations in varied subjects, get them evaluated and get the results announced in time;

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1987
C.F.T.R.I., MYSORE

ASSOCIATION OF INDIAN UNIVERSITIES

UNIVERSITY NEWS

A Weekly Chronicle of Higher Education

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—inspire the staff to effectively participate in the growth and development of the institution;

—encourage others to be creative and be a creative worker;

—impress upon the teachers, the necessity to have clear-cut goals in measureable terms and achieve them substantially;

—co-operate at various levels with other institutions having similar objectives;

—ensure observance of all statutory requirements; and

—maintain the necessary discipline without being unpleasant.

Apart from these, it is also necessary that the Vice-Chancellor has certain humane qualities. He should sympathetically consider all legitimate grievances and aspirations of the staff, but at the same time keep in view, the general interest of the University. He should show a genuine concern for the welfare of the employees and students.

7.3 At a given point of time in the history of a University and its stage of development, the problems associated with its academic programmes, examinations, development, general and financial administration may vary from those that may exist at other times and stages of development. To perform effectively and successfully the duties of a Vice-Chancellor at a given point of time and stage of development of the University, the requirements of the personality as well as the predominent competencies of the individual to be appointed as Vice-Chancellor may vary. The Committee which is given the privilege of suggesting names for the appointment and those that are ultimately responsible in making the choice of the individual will have to consider in detail :

—the objectives, powers and jurisdiction of the University;

—the duties and functions of the Vice-Chancellor as enumerated in the relevant statutory provisions;

—the progress that has been made by the University and its future direction of growth; and

—the problems that the institution has been facing and is likely to face in the near future depending upon the type and direction of growth.

The position of Vice-Chancellor is a functional one. The appointment is not to be treated as conferring an honour on someone or as honouring an institution by appointing an individual to the position. The process of appointment has to be perceived as selecting a person who is capable of and is willing to discharge the duties as enumerated in the Statutes and Act, establishing the University.

(The author gratefully acknowledges the valuable suggestions he received from Prof. T. Subba Rao, Principal, Technical Teachers' Training Institute, Madras while finalising the paper). ☐

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3. Warren Bennis, Unconscious Conspiracy—Why Leaders Cannot Lead, Amacom, New York, 1976.

ADITANAR COLLEGE OF ARTS AND SCIENCE
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(Affiliated to Madurai Kamaraj University)

Conducts an "ALL INDIA SYMPOSIUM ON VALUE ORIENTATION EDUCATION" (Sponsored by University Grants Commission) from 26th December 1987 to 30th December 1987 and invites applications from teachers working in affiliated colleges and Universities in India for participation.

Interested teachers may send their applications through proper channel, to reach the Principal on or before **28th November, 1987**. The applicants must enclose a bio-data, including details of name, date of birth, designation, institution, interest shown in value orientation Education and also any special reason for participating in this symposium. T.A. and D.A. will be paid as per U.G.C. conditions. The selected candidates will be intimated in the first week of December, 1987.

Concept of a Children's University

—An Academic Innovation

Jai Prakash Bharati*

We find the spectre of terrorism and extremism, regionalism and communalism raising its head on all sides in the country. The administration has unfortunately failed to control this phenomenon. The real, long range solution of this problem lies with the education of the children. The child has been neglected in our country for forty years. The children who saw the light of day in free India are now grown up but they do not behave like citizens of a free country. A great majority of them are cut off from the national mainstream. They are deprived of even the minimum of educational facilities. They are living in a state of frustration with shattered dreams. Media like the television are arousing new and distorted ambitions in them which they find difficult to realise. The bonds of our cultural heritage that tied us to the native soil are constantly being shaken.

In the midst of this encircling gloom, one can see a ray of hope. I have been writing for children for the last three decades and my perception of this task has convinced me that one cannot do justice with this type of writing without an adequate understanding of the psychology of the child and an idea about his total personality, his health, his socio-economic and religious background, his family atmosphere and at large the social and political set up in which he is being brought up. That requires a multi-disciplinary approach to understand the mind of the child. I found to my utter amazement that whether in educational thought or in social doctrines, no attempt has so far been made to discuss and analyse the problems of the child in their totality. The various problems relating to the child fall in different disciplines. We study about the psychology, we discuss the educational problems of child in education, we deal with health problems of the child in medicine and we attend to the physical problems of the child in sports and games. But the child is not a mechanical aggregation of all these faculties. He is a total being, a sort of a mini-universe which was, in our mytholog, experienced by Yashodha when Krishna as an infant opened his mouth before her. The child is complete universe and there are thousands of areas about the child which remain unexplored. Such a study in its various aspects is possible only in a university and that led me to seriously consider this proposal.

It was about five years back that an enthusiastic friend of mine organised a seminar on this topic at Bareilly (UP). The seminar was attended by a cross-section of the city elite and they felt much impressed by the idea.

When we thought to set up the Indian Council for Child Education, we discussed the idea of setting up a Children's University with some of the top educationists and education planners, including, Prof. Moonis Raza, the present Vice-Chancellor of Delhi University, and they got interested in it and for the first time in history there is a move to establish a Children's University.

The Children's University has been conceived as a three-component structure.

First, at the centre would be a school for students from all parts of the country living and studying together in an humane set-up.

For our distinguished educationists the two words—'Children' and 'University' are incompatible. How can they think of anything other than the traditional university system? Under the vicious influence of the West, our intellectuals have lost their true identity. It is only the non-conventional universities which can perhaps show the right path in the field of education. The Children's University would be such a non-traditional university which will not depend on government grants for its existence. It would be an institution which will help us in realising our cherished dreams about children's education. The Nursery Section of the school will comprise kids from three to five or six years of age. Education will be imparted to them through non-conventional methods, making full use of games, play and hobbies. No conventional textbooks will be prescribed for them.

Children above five years of age will be admitted to the main school. Initially it will have one thousand

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**Editor of Nandan and Secretary General, Indian Council for Child Education.*

students. Every year a thousand more students will be added until the total strength is ten thousand. They will receive education as resident students for eleven years. At this stage also, education will not be imparted through a huge pile of text-books but through a combination of work experience and learning rather than teaching oriented methodologies. During this period, all the children will also be required to take part in productive work in the University campus. They will learn certain skills which will enable them to pursue their own vocation. Conventional examinations would be dispensed with during the entire schooling period.

After leaving the school, its alumni would be provided opportunities on the Campus for specialised studies in subjects of their interest.

Second, there would be a number of specialised institutes on the Campus which would be centres of research on problems related with children. These institutes would make a close study of the school as well as the surrounding community and would abstract lessons from experience for replication elsewhere. Four such institutes are envisaged;

- Institute of Child Health
- Institute of School Education
- Institute of Games and Sports for Children
- Institute of Toys and Hobbies for Children

Third, the Campus of University would itself pr vide an educational experience of great value.

A 'mini India' would emerge on the Campus. Ever State will be provided land to set up their own cultur centres. These centres will remain active throughou the year. Everybody will have a glimpse of the lifestyl food habits, dress and other important aspects of different parts of India. The festivals of various States wi be celebrated by all together.

The plan of the University is being worked out b a group of senior academics under the Chairmanshi of the well known educationist, Prof. Moonis Raza It is proposed to establish the Children's Universit near the capital. This would act as the nodal point having regional centres in different parts of the country The Indian Council for Child Education has taken the initiative in this direction and has made a provision for 200 acres of land. Specialists from different fields are being associated with the Committee.

The best features of Tagore's Santiniketan, Sri Aurobindo's Ashram at Pondicherry, the Gurukul system, the Bal Mandir of Gijubhai and Ivan Illich's 'Deschooling Society' will be incorporated in the scheme for the development of the proposed University. This scheme will go a long way in promoting a sense of unity, goodwill and humanism in the new generation. □

National Conference on Role of Universities in Implementation of New Education Policy

The Association of Indian Universities will organise, in collaboration with Osmania University, a National Conference on Role of Universities in Implementation of New Education Policy on December 18 & 19, 1987 at Hyderadad.

The New **Education Policy (NEP)** visualises the role of higher education as providing people with an opportunity to reflect on the critical, social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills.

The role of universities is crucial in the matter since one of the important functions of universities and institutes of higher learning is to provide specialized scientific and technical skills, imparting of knowledge, contributing to every sector of national development and improving social conduct and behaviour. Thus, a major share of responsibilities, as envisaged in the NEP, rests with the universities and other educational institutions. It becomes imperative for the educational community to try to define some of the important issues involved in the management of higher education, the efficiency improvement, the financing of higher education, youth services and physical fitness programmes, education in human values, etc. in the light of the NEP recommendations.

The deliberations of the Conference will focus on the following topics :

I. Management of Higher Education
II. Improvement in Efficiency
III. New Strategies in Higher Education

PROGRAMME

December, 18, 1987 (Friday)

10.00 A.M.	INAUGURATION
11.30 to 1.00	SESSION I
2.00 to 4.30	SESSION II

December 19, 1987 (Saturday)

9.00 to 11.30 A.M	SESSION III
12.00 to 1.30	SESSION IV
2.30 to 4.30	SESSION V (Plenary)

Convenor

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DAV MOVEMENT

G.B.K. Hooja*

By the time Death came to claim him, Swami ayananda (1824-1883) had attained the status of a uru and a leading light for his innumerable followers read all over Northern India. He was a great pat- ot and an enlightened humanist who loved the ountry which sustained him and wished to serve it to e best of his capacity and through it the mankind. e discovered in the Vedas a philosophy and a way f life which could serve as a model for individual rowth as well as social cooperation. Taking his cue om Keshubchandra Sen, the redoubtable Brahmo eader of Bengal, he established the Arya Samaj as a ehicle for the propagation of his ideas. With the ame end in view, he adopted Hindi (Arya Bhasha as e called it) for his public discourses and strove his est to overcome his initial disadvantage, for Hindi as neither his mothertongue, which was Gujarati, nor is acquired language, which was Sanskrit. His Hindi was the popular version of a language readily under- tandable by the common folk of upper India, of ourse, with a Sanskrit bias in word-choice. He pro- agated the study of Sanskrit too for the reason that e wished to prove the supremacy of ancient Indian iterature over Western literature, peeved as he felt at the supercilious attitude of the Brisith rulers who declared in their haughtiness that nothing would be lost if all Asian literature were dumped into the sea ! For this reason, he decided not to study English himself while he advised his followers not to deny themselves that benefit of Western Knowledge. As for himself, he said that if he read English, it would be argued that the reforms which he advocated were drawn from foreign sources. His intense love of Swadeshi (national) culture and way of life led him to claim Sanskrit and the Vedas as the source of all knowledge and progressive thought and to prove this point he preferred not to delve in English !

When the followers of such a determined soul met to plan a memorial after his death they had yet one more hurdle to overcome. He was an iconoclast. So a staute in his honour was out of question.

Dayananda had laid down ten principles of the Arya Samaj. The 4th principle read:

We should always be ready to accept truth and give up untruth.

The 6th principle read :

The primary aim of the Arya Samaj is to do good to all, i.e., to promote their physical, spiritual and social well-being.

The 8th principle read :

We should strive to dispel ignorance and promote knowledge.

And the 9th principle read :

One should not be content with one's own welfare, but should consider one's welfare inherent in the welfare of all.

To the followers of the Swami who had assembled to consider the question of raising a memorial in his honour, the message was clear:

Sarve bhavantu sukhinaah
Savre santu niraamayaah
Sarve bhadraani pashyantu
Maa kashchid—dukh bhaagbhavet

Let all be happy
let all be healthy
let all see good
let nobody be unhappy; and

Tamaso ma jyotirgamaya, lead me from darkness to light.

They, therefore, decided to start a DAV High School at Lahore (now in Pakistan).

The choice of the name, DAV was significant, D stood for Dayananda, A for Anglo and V for Vedic. They were aware of the value of Western education. but they did not wish to become rootless. The DAV College Trust and Management Society was formed with a view to establishing in the Punjab and elsewhere institutions

(a) to commemorate the memory of Swami Dayananda, and
(b) to propagate the teachings of the Vedic Dharma.

Former Vice-Chancellor, Gurukula Kangri Vishwavidyalaya 5, Abul Fazal, Road, New Delhi-110001

More specifically, the objects of the Society were :

- I. (a) To encourage, improve and enforce the study of Hindi;
  - (b) To encourage and enforce the study of classical Sanskrit and the Vedas;
  - (c) To encourage the Theory and Practice of Ayurveda;
  - (d) To provide instruction in
    - (i) English and other modern languages,
    - (ii) Arts, and
    - (iii) Sciences, both theoretical and applied including Medicine, Engineering, etc.
- II. To provide means for giving technical, industrial, commercial and vocational education.
- III. To affiliate and manage institutions having objects similar to those mentioned in Articles I and II above, and
- IV. To do all other things as are incidental and conducive to the attainment of the above objects or any one of them.

Aa no bhadraah kratvo yantu vishwataah.

Let noble thoughts come to us from all directions.

This Vedic Verse was adopted as the Ideal of the DAV movement.

The Society was registered in 1885 under the Societies Registration Act of 1860. The First DAV School opened at Lahore on June 1, 1886. It was lucky to have Lala (Later Mahatma) Hans Raj, B.A. as the first Headmaster. He offered to serve the Society as a Life Member on a pittance. Following his example many other distinguished academicians came up to join the cadre of Life Members and contributed in a big way to the growth of the movement. Names of Devichand, Devi Dayal, Ram Rattan, Mehrchand, Dewanchand, Gyanchand, Sain Das, Suraj Bhan, Sant Ram Syal, Charu Deva, Amar Nath Bali, Ram Dass, Ralla Ram, G.L. Dutta, readily come to one's mind. They formed a band of devoted workers who imparted not only intellectual and scholastic education, but also sought to mould the characters of young educands by example.

When I first entered the portals of the DAV College, Lahore as a Ist year student in 1930, in his inaugural address of the Session, Principal Sain Dass said, "You have come to Lahore from all corners of the Punjab. You shall be tempted to go to Anarkali (the popular shopping bazzar) and would like to buy everything shall attract you. But remember, the money you shall spend is the hard earned money of your parents. Many of them have made it possible to support your education by cutting their own legitimate needs. When you feel like buying an article, ask yourself thrice : Can I do without it? If the answer is 'no', go ahead; otherwise postpone the indulgence."

And then, I am reminded of Prof. Charu Deva who decided to stay in the classroom on the day following the execution of Bhagat Singh, Rajguru and Sukhdeva, when the students called for an hartal. His plea was that it was his duty (Dharma) to be available in the class, even though the students might boycott it !

And then there was Prof. Sant Ram Syal who was beaten mercilessly by a British Sergeant. He manfully stood upto him and eventually lodged a complaint to the competent authorities. But he declined to implicate anyone falsely. He earnted praise from the trial judge.

Under the guidance of a devoted faculty and the leadership of stalwarts like Lala Lajpat Rai, R.B. Lalchand, Justice B. Tekchand, Justice J.L. Kapur, the DAV movement made rapid strides and was a formidable fountain of education in Northern India at the time of Partition (1947). The Society suffered a severe blow in consequence thereof and had to move its Headquarters from Lahore to Jalandhar (East Punjab). Property worth over rupees 2 crores was left behind. The DAV College, Lahore premises, however, continued to serve as a Refugee Collecting Centre for a long time.

This was the period when hundreds of DAV employees having been uprooted from their hearts and homes were running from pillar to post in search of rehabilitation. Besides, there were thousands of students whose studies had been interrupted. Luckily again, the DAV movement found Justice M.C. Mahajan, the Chief Justice of India at the helm of its affairs. A rehabilitation fund was floated and public donations invited. The office of the Managing Committee was shifted to Delhi. Gradually, the DAV institutions left behind in Pakistan were restarted in various places according to a planned programme. In due course, a network of DAV institutions has come to be establishee in Punjab, Haryana and Delhi and the movement has now entered a new phase by extending its activities into the backward areas of Bihar, Orissa and in the far east in Tripura.

At present, the DAV Managing Committee is admittedly the biggest educational body in the country running the largest complex of 300 privately-owned educational institutions which include science/commerce/arts schools and colleges, technical and professional institutes, an Ayurvedic College, a College of Theology and Centres for Research in Vedic Philosophy all over the country. To Prof. Veda Vyasa, a legal luminary and a Sanskrit Scholar of eminence goes the credit of giving a new direction to the movement and setting forth new dreams before his energetic band of co-workers, Darbarilal, Ram Nath Sehgal, T.R. Gupta, D.P. Seth and others.

Sensing the aspirations of the people and the demand for excellence in education, the DAV College Managing Society has now decided to open a chain of quality schools to be run on Public School lines. They aim at :

(i) Academic excellence alongwith opportunities for flowering of individual talent. Due emphasis is to be laid on the formation of character and a spirit of dedication for the service of the society.

(ii) Enabling a child to explore from his environment that knowledge which would prepare him for facing the challenges of modern life without depending upon spoon-feeding from his teachers.

(iii) Developing a rational and scientific outlook on life and acquiring a thirst for knowledge.

(iv) Inculcating the fundamental values of life like compassion, tolerance, truth, honesty, love for one's fellow beings and respect for our ancient thought and culture.

The Society now has 120 such public schools in 10 states and 2 union territories. Duly impressed by the aims and objects of the DAV Public Schools and their outstanding track record, a number of private/public sector organizations have invited the DAV Managing Committee to open similar schools for the wards of their employees in various parts of the country. Mention may be made of Anpara Thermal Project, the Associated Cement Companies, Bhakra Beas Management Board, Bharat Coking Coal Ltd., Central Coalfields Ltd., Hindustan Cables Ltd., Hindustan Fertilizer Corporation Ltd., Hindustan Steel Ltd., Metallurgical and Engineering Consultants (India) Ltd., Mishra Dhatu Nigam Ltd., and Visakhapatnam Steel Project.

At the invitation of prestigious educational organizations of some foreign countries, Prof. Veda Vyasa and his co-workers recently visited UK, USA, Indonesia, Thailand, Japan and Mauritius. These visits have been mutually beneficial and have opened new vistas for collaboration between DAV Managing Committee and the educational organizations of these countries, particularly those interested in the holistic (including cultural) education of the students belonging to families of Indian origin. It may be stated here that the Indians abroad do feel the need for transmission of eternal Indian values to their wards growing up in alien environment.

At this point of time, when West is looking towards India for Oriental Wisdom, the Indians abroad legitimately cherish their ancient culture and its perennial values and would like their wards not to be uprooted. As Gandhiji said, "I would welcome winds to come over from all directions but would not like to be swept off my feet". This is exactly the DAV motto and surely this universal message indicates the path to the bewildered humanity standing at the door-step of a nuclear winter. ☐

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CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
December 7-11, 1987	Seventh Triennial International Conference on Thin Films, (ICTF-7)	To take stock of recent progress in the field of science, technology and applications of their films.	Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.	Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.
December 16-18, 1987	International Symposium on Electronic Devices, Circuits and Systems.	To provide a forum to research workers all over the world for exchange of information and technical perceptions in electronic devices, circuits and systems.	Indian Institute of Technology, Kharagpur.	Prof. N. B. Chakravarti, Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur-721302
December 18-19, 1987	National Conference on Role of Universities in Implementation of New Education Policy.	The Conference will focus on Management of Higher Education, Improvement in Efficiency and New Strategies in Higher Education vis-a-vis New Education Policy	Association of Indian Universities in collaboration with Osmania University, Hyderabad.	Dr. V. Natarajan, Project Director (Exams) Association of Indian Universities, 16, Kotla Marg, New Delhi-110002
December 23-26, 1987	XVI All India Conference of the Indian Association of Special Libraries and Information Centres (IASLIC)	To discuss the Challenges of the Emerging Information Society : National Policy Issues.	Sri Venkateswara University Library, Tirupati	Shri R. Sreepathi Naidu, Organising Secretary & Librarian, Sri Venkateswara University Library, Tirupati 517502
December 28-30, 1987	Third National Conference on Surfactants, Emulsions and Biocolloids.	To provide an opportunity to technologists and experts from academic and research institutions and industries to exchange views and discuss developments related to latest findings from active research.	Aligarh Muslim University in collaboration with Indian Society for Surface Science and Technology.	Dr. H.N. Singh, Reader, Department of Chemistry, Aligarh Muslim University, Aligarh.
December 28-31, 1987	33rd All India Library Conference	To discuss various aspects of modernisation in Libraries	Bharathidasan University in collaboration with Indian Library Association	Mr. A. Sundararajan, Organising Secretary, 33rd All India Library Association, Bharathidasan University Library, Tiruchirapalli 620023
February 5-6, 1988	National Seminar on Interaction between Institutions and Industries through Science and Technology Entrepreneurs' Parks	To provide a forum of young entrepreneurs, industrialists, scientists and educationists to deliberate on the vital issues of Industry-Institution interaction.	STEP, Roorkee and University of Roorkee, Roorkee	Prof. M.P. Jain, Organising Secretary, National Seminar IIISTEP, Office of the DRIL, University of Roorkee, Roorkee-247667
July, 12-14, 1988	International Symposium on Recent Advances in Male Reproduction	The Symposium will focus on Molecular Biology of Inhibin, Androgen Binding Protein Regulation of Fertility, Peptides in Testis Function and Steroidogenesis in Testis	University of Hyderabad in collaboration with the Indian Society of Andrology	Prof. P.R.K. Reddy, School of Life Sciences, University of Hyderabad, Hyderabad 500134
September 26-28, 1988	International Conference on Welding Technology in Developing Countries	To provide an opportunity to scientists and technologists from developing and advanced countries to share their experiences in the area of Welding Technology.	University of Roorkee, Roorkee.	Prof. P.C. Gupta, Organising Secretary, International Conference on Welding Technology in Developing Countries, Department of Mech. & Ind. Engg., University of Roorkee, Roorkee—247667

Open Varsities Network

A nationwide network of open universities is proposed to be set up. According to Prof. G. Ram Reddy, Vice-Chancellor of Indira Gandhi National Open University, the network of open universities in the country could dramatically optimise the choice of subjects available to students in this emerging system of education. This would not only avoid duplication of work but would also save money.

Under the network, the open universities could function as an open learning system, Prof. Reddy said, and a student joining an open university should be free to opt for courses from other open universities. Thus, while a Bachelor of Arts degree requires 96 credits with a maximum of 20 subjects, credits attained in other open universities would be taken into account by the parent university in giving the degree.

Unlike in the formal education system where course combinations are either fixed or limited, the Open University encourages intellectual flexibility, and students of B.A. and B. Com. are free to take any combination of courses that appeals to them. While national standards are maintained in the course compositions (with lessons being written by eminent educationists in all fields and examination scripts being corrected by renowned experts), students are allowed to take a lighter study load than in the formal stream, and thus take a little longer to attain their degrees. This flexibility is extremely useful for students who have not cleared their 10 plus 2 examinations before joining the university (after an entrance test and orientation course).

The Open University, Prof. Reddy said, is constantly accountable and can never afford to lower its standards. In the formal system, he said, standards could vary from teacher to teacher but here lessons are prepared "from A to Z before a course can be announced." Both the printed material and the video films or radio and television programmes thus have to have a good standard, to pass muster.

The Vice-Chancellor said the university also provided a unique opportunity to distinguished academics to experiment in curricular development. The Open University, he said, has also pioneered a training programme for teachers involved in distance education. At present this is a diploma course, but later a degree programme and a post-graduate course would be introduced.

Multi-processor Computer

The Indian Institute of Science (I.I.Sc.), Bangalore is developing a multi-processor computer with high-speed computing capability. Funded by the Department of Electronics and the United Nations Development Programme the project to cost Rs. 3 crore will be completed in 5 years period.

According to Prof. V. Rajaraman, Chairman of the computer centre, I.I.Sc., upto four micro processors had been integrated in the experimental stages. Under the Knowledge Based Computer System Development Project, started early this year, the first prototype would have eight microprocessors, for speedy operations. The prototype would be ready in the next couple of months.

Explaining that multi-processor computers had great potential in times to come, Prof. Rajaraman said work was on to evolve a compatible programme language for the new prototype. He said the fifth generation computers would be characterised by multi-processor technology, and would be "knowledge-based," using artificial intelligence. Simultaneous, parallel use of computers, to deal with wider arrays of data at considerably increased speeds was emerging as a new trend in the field of computers, he added.

The computer centre was also engaged in compiling a list of Indian bio-technologists all over the world, and keep track of their contribdtions. The project is funded by the Government of India, he added.

Topology Conference '87

A U.G.C. sponsored Instructional Conference on Algebraic and Differential Topology was recently held under the auspices of the Mathematics Department, North Eastern Hill University, Shillong. The conference offered an opportunity to research students as well as teachers in universities and colleges from different parts of the country having interest in Algebraic and Differential Topology to meet at one place and to learn the state of the art and the techniques of this widely growing field with increasing applications in different disciplines of science.

The 3-week conference consisted of series of lectures/supplementary lectures delivered by eminent scientists and student participants from different parts of the country. Discussions and problem solving sessions were also organised.

Prof. S.N. Dube, Head of Mathematics Department chaired the opening session while Prof. R.K. Mishra, Vice-Chancellor presided over the concluding session.

This conference will be followed by an advanced level conference on Algebraic and Differential Topology to be held in February 1988 at the University of Allahabad.

International Colloquim for Library Personnel

Prof. P.B. Mangla, Head of the Department of Library & Information Science and Dean, Faculty of Arts, University of Delhi, participated in the International Colloquim on the Harmonisation of Education and Training for Library, Information and Archival Personnel held at London recently. The Colloquium was organised by IFLA in cooperation with International Council on Archives (ICA), FID and UNESCO and was attended by Librarians, Information Scientists and Archivists in developed and developing countries from all over the world. The recommendations made by the Colloquium would be of far reaching importance in bringing harmonization in the Education and Training of Librarians, Information Scientists and Archivists in the world as a whole.

Prof. Mangla, a member of the Executive Board of IFLA, also participated in the IFLA Conference held at Brighton (U.K.). The IFLA Conference this year was attended by more than 2,500 delegates from about 125 countries. He also availed of this opportunity to visit various Libraries and Library Schools in U.K.

World Laboratory

Dr. T.M. Karade, President, Einstein Foundation International said that plans are afoot to set up a "world laboratory" in Nagpur, Gorakhpur and Calcutta under the auspices of the World Laboratory, Geneva. He said that matter was recently discussed at the seven-day global seminar on mathematical physics held at Nagpur with general coordinator of World Laboratory for Asia, particularly for India, Ve De Sabbata.

Dr. Karade said the purpose of the "world laboratory" was to promote east-west and north-south technical and scientific cooperation for research without secrecy and without frontiers.

Central Assistance for Telugu Deptt.

The University Grants Commission (UGC) is reported to have agreed to provide special assistance to the Department of Telugu Studies of the Sri Venkateswara University to the extent of Rs. 19.55 lakhs, both recurring and non-recurring, under departmental special assistance programme for five years. The assistance includes construction of a building, besides grants for equipment, library, publication of books and faculty positions in the Department.

News from Agril. Varsities

Sunflower Cultivation Recommended

Scientists of the Indian Council of Agricultural Research (ICAR) have recommended cultivation of sunflower for profit wherever irrigation potential is available or residual moisture adequate. Sunflower is a crop which can be grown round the year. Whether irrigated or rainfed, saline or sodic areas, sunflower has a remarkable capacity to adapt itself.

Under rainfed conditions, the crop yield can be eight to ten quintals per hectare, whereas in irrigated areas, the yield can go up to 20 quintals per hectare. Where there is assured irrigation, farmers are advised to go in for cultivation of hybrids for a bumper harvest. But in areas, where the moisture availability is low or irrigation can be made available for a limited period, early maturing varieties like Modern and Co-2 would do well.

Other promising varieties are EC 68414 (Peredovic), EC 68515, and Co-1. Seeds of improved Soviet variety, Peredovic, were put to large-scale seed multiplication during the kharif this year.

According ICAR scientists, as rabi crop, sowing under rainfed conditions should be undertaken when soil moisture and temperature are satisfactory. Under irrigated situations, the crop can be sown up to November. Where the fields are free only after November sunflower can grow, but the irrigation requirements would be more. Sunflower responds well to recommended sesame as another remunerative oilseed crop for growing, in pre-rabi, rabi and summer seasons. The average yield, which is around two quintals per hecatare during kharif, can be raised to eight to ten quintals, during rabi and summer.

In central and peninsular

regions such as Madhya Pradesh, Andhra Pradesh, Gujarat and Maharashtra, sesame is grown in September as well as early October to January. This crop has also gained popularity as a summer crop (January to May) after potato or late paddy in West Bengal, Bihar, and Orissa.

In southern India, the crop has good potential in all the three seasons: July-August to November-December under rainfed conditions, rabi crop between November and January-February, and summer crop between March and June.

Rice Research Centre

Dr. Kirti Singh, Vice-Chancellor of Narendra Deva University of Agriculture & Technology said that international rice research centre will be established at the university soon, which will be the second biggest rice research centre after International Rice Research Institute, Manila (Philippines). He disclosed this at the end of two-day Kharif Kisan Mela organised by the University at Faizabad recently. He told that the project has been finalised with the aid of World Bank and other international organisations including—Food & Agriculture Organisation. New strains of high yielding varieties of paddy suitable for different agro-climatic conditions in various countries, specially South-East Asian countries and China will be developed.

Earlier, inaugurating the Kisan Mela, Dr. Kirti Singh said that scientists of the university had evolved crop pattern and strategies for early rabi crops of oilseeds and other crops which will help the farmers to offset the losses due to drought and floods in U.P. He advised the farmers to visit university farms to gain practical techniques.

Dr. R.K. Singh, Director Research, explained to the farmers about new crops being developed at the university farms, and took them round the experimental farms at Masodha campus.

HAU Releases New Crop Varieties

The scientists of Haryana Agricultural University (HAU) have evolved and released four improved crop varieties, namely, HKR-120 of rice, DS-5 of Desi cotton, 'Chirodi' of cowpea and 'Aparna' of field pea.

In the national trials, HAU's rice variety HKR-120 showed superiority in grain yield over the two earlier varieties of rice, namely, PR 414 and Jaya. This is a mid maturity variety with a maturity period of 150 days and has yielded on an average 60 quintals per hectare at the HAU research farm and 55 quintals per hectare at the farmers' fields. Besides having a high level of yield and good quality of rice, this variety possesses resistance to the three major diseases of rice, namely, bacterial leaf Blight (BLB), stem rot and White Baked Plant Hopper (WBPH).

The lint yield increase of DS-5 variety of cotton has been 36.7 and 19.2 per cent over the existing G-27 and DS-1 varieties respectively. The special feature of this new variety is its non shedding of 'Kapas', ease in picking and little management requirements. The lint of this variety is coarse and, therefore, suitable for the export market.

The 'Chirodi' variety of cowpea indicated its superiority over the previously released variety FS-68 not only in productivity but also in adaptability. The grains of this new variety are sweet and possess quick cooking ability. Besides being synchronous in maturity, its pods do not shatter after maturity and can be collected in one picking. It matures in 75 days and yields 10 quintals per hectare and out-yields FS-68 by 44 per cent. 'Chirodi' is suited to the rainfed conditions in Haryana.

The leafless variety of field pea 'Aparna' has yielded 40-50 quintals per hectare at the farmers' field under conditions and fits well in rice-pea rotation. Its plant type is dwarf, compact and responds well to increased plant population. The additional advantage of this variety is its resistance to powdery mildew and leaf diseases. Moreover, the presence of double padded stipules grants protection from bird damage. It escapes frost due to late pod formation.

Surgical Technique to Enhance Meat Production

The College of Veterinary Sciences of Govind Ballabh Pant University of Agriculture & Technology, Pantnagar, has designed a surgical technique which can raise country's meat production by 25 per cent. Standardized by the scientists of the Department of Surgery and Radiology, this technique of partial castration involves only the elimination of testicular parenchyma. The blood supply and innervation of surviving elements of genital glands are not removed thus providing for the preservation of the hormonal function, which allows better weight gain in comparison to entire and fully castrated animals.

The technique is quite simple and can be carried out readily and rapidly with almost no pain and untoward results in rams/goats at the age of about one month and in male buffalo calves at 2-4 months age. The desirable slaughter age for rams/goats should be about a year and for male buffaloes around 2 years.

News from UGC

INSAT-1B Programme of UGC

Between 9th November to 30th November, 1987 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV Network throughout the country. For the viewers in Delhi and surrounding areas these programmes can be seen on the second channel.

9.11.87

"Life and Work of C.V. Raman-II"
"Classical Mechanics-V"
"Waves"

10.11.87

"Educational Development in India—Post Independence Perspective"
"Rationale of Planning"
"Vocational Training"

11.11.87

"Origin of Change-I"
"A Talk with Dr. L. Simonato on occupational Cancer-II"

"The Shertally Leg"

12.11.87

"The Genius of Leonardo"
"Max Mueller"

13.11.87

"Know them by dialogue Prof. Wetherill-I"
"Journey through the Solar System Mercury : Experiment of A Planet"

14.11.87

"Cinematic Eye-Beauty and the Beast"
"Language of Gestures-II"

15.11.87 (Sunday)

No Telecast

16.11.87

"Life and work of C.V. Raman-III"
"Classical Mechanics-VI"
"Levers"

17.11.87

"Industrial Development in India—Post Independence Perspective"
"Instructional Process in Industrial Training"
"An obligation for Safety"

18.11.87

"Origin of Change-II"
"A talk with Dr. P. Coomba on occupational Health"
"Eye : An inside story"

19.11.87

"Art of Building"
"A Future in the Past"

20.11.87

"Know them by dialogue Pro
Wetherill-II"
"Journey through the Sola
System"

21.11.87

"Cinematic Eye-Hobson's Choice"
"Language of Gestures-III"

22.11.87 (Sunday)

No Telecast

23.11.87

"Life and work of C.V. Raman-IV"
"Classical Mechanics-VII"

24.11.87

"New Economic Policy—I"
"What does underdevelopment mean"
"NTTF : Success through skills"

25.11.87

"Hair : Cables of Information"
"Variations of a Theme"
"Modern irrigation system"

26.11.87

"Energy and Architecture"
"Early Andhra Coins"

27.11.87

"Strides in space"
"Journey through the solar system earth : The planet"

28.11.87

"Cinematic Eye-La Strada"
"Staging Reckett"

29.11.87 (Sunday)

No Telecast

30.11.87

"Life and work of C.V. Raman-V"
"University Round Up"

Sports News

Padma to Lead Varsities' Cricket Team

Ms. Padmavathi Reddy of Osmania University has been named as the skipper of the Indian Universities Junior Women Team that will participate in the Junior National Women Cricket Championship being held at Lucknow from Nov. 17 to 22, 1987. The team was selected after trials on Oct. 30 & 31, 1987 at IIT, Kanpur. Other members of the team are :

1. Madhu Kumari Singh (Ranchi); 2. G.S. Laxmi (V. Captain) (Ranchi); 3. B. Sunitha (Osmania); 4. Ritu Sharma (Panjab); 5. Suhasini Vaidya (Nagpur); 6. Kashmira Sudan (Kanpur); 7. Sangeeta Saxena (Kanpur); 8. Arti Amdekar (Bhopal); 9. Sarbjit Kaur (Punjabi); 10. Anita Rana (Panjab); 11. Prabha Pawar (Nagpur); 12. Uma B. (Delhi); 13. Suman Sharma (Delhi); 14. Sameera Khan (Osmania); and 15. Seema Sinha (Kanpur).

The team is presently under training at Kanpur under the supervision of Mr. Babu Achareth, Cricket Coach of Calicut University.

News from Abroad

Rs. 500m Education Plan for Pakistan

The Federal and Provincial Governments in Pakistan have planned several projects to be initiated during the current fiscal year for providing educational facilities to the maximum number of people and to achieve the target of 50 per cent literacy rate by 1990.

An amount of Rs. 500 million from the Prime Minister's employment fund has been earmarked for this purpose for 1987-88. The Ministry of Finance has so far released Rs. 300 million out of this fund to the Ministry of Education for establishing *Nai Roshni* schools. Under this scheme, 22,000 schools will be set up. About 15,000 such schools had already started functioning in the country. About eight lakh persons would benefit from this scheme.

Another big scheme, the Iqra Pilot Project, which has already been initiated in Rawalpindi Division on experimental basis, will ultimately be spread all over the country. This project would also provide employment opportunities to the educated unemployed.

Soviet Supercomputer

Soviet scientists have developed a new supercomputer capable of carrying out many hundred million operations per second. The supercomputer, ES-1766, developed by scientists of the Kiev Institute of Cybernetics, can accommodate up to 192 microprocessors for simultaneous operations. It is specially suited for mathematical modelling of global atmospheric processes, as well as for controlling large-scale automated production systems.

ASSOCIATION OF INDIAN UNIVERSITIES

CORRESPONDENCE COURSE IN EVALUATION METHODOLOGY AND EXAMINATIONS

Applications are invited from College/University teachers for admission to Correspondence Courses in Evaluation Methodology and Examinations at Basic Level, Intermediate Level and Advanced Level/Special Professional Course. The duration of each of the three courses is six months. A personal 'Contact Programme' for three days is planned for each of the three courses. Universities/Institutions sponsoring candidates can meet the registration/course fees from out of unassigned grants by UGC.

Request for prospectus and application form accompanied by crossed Indian Postal rder for Rs. 10/- drawn in favour of the Secretary, Association of Indian Universities and a self addressed stamped envelope (Rs. 2/-) should be sent to the Project Director (Exams), Association of Indian Universities, 16 Kotla Marg, New Delhi 110002. Last date for receipt of applications is extended to **15th November, 1987** for both sponsored and non-sponsored candidates.

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is open from 9-00 a.m. to 5-30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Library Science

1. Dorka, Piara Singh. *Reference and bibliographical sources of Punjabi language and literature : State of the art survey and evaluation of selective sources.* Panjab. Dr. H.R. Chopra.
2. Mishra, Purnima. *The use of chemical literature in India : A bibliometric investigation.* BHU. Dr. B.N. Singh.

Sociology

1. Ahluwalia, Rachna. *Professional orientation of medical students in Medical College, Rohtak : A sociological study.* Panjab. Prof. K.P. Singh.
2. Ishwar Chandra. *Socio-economic studies of BHU.* BHU. Prof I.C. Tiwari.
3. Tiwari, Kul Pati. *Structure and functions of Lord Vishwanath Temple.* BHU. Prof. S. Tripathi.

Political Science

1. Mishra, Anup. *Some aspects of India's foreign policy.* BHU. Dr. A.S. Mishra.
2. Ojha, Hari Narayan. *Some aspects of India's foreign policy.* BHU. Dr. A.S. Mishra.
3. Padhi, Sabita. *Deffing pattern of non-alignment in South Asia.* BHU. Dr. P. Upadhyay.
4. Pandey, Nagendra Kumar. *Indian Govt. and politics.* BHU. Dr. A.S. Mishra.
5. Shrestha, Deepak Krishna. *Nepalese politics.* BHU. Dr. P. Upadhyay.
6. Singh, Uma Shanker. *Bharatiya Samvidhan aur dharam nirpeksh rashtra kee pratisthapana.* BHU. Dr. T.N. Pant.
7. Tiwari, Shambhu Sharan. *Office of the Chairman of Bihar Legislative Council, 1957 to present day.* BHU. Dr. P. Upadhyay.

Economics

1. Das, Dipak Ranjan. *Urban Poverty.* BHU. Dr. P.K. Chaubey.
2. Karim Koshish Mohammad Hossain. *Effects of I.G. Canal on rural development of Rajasthan State.* BHU. Prof. G.B. Kushwaha.
3. Prakash, V. *Energy and economic development.* Kerala. Dr. P.R. Gopinathan Nair.

Law

1. Dwivedi, Bishnu Prasad. *The changing dimension of personal liberty in India.* BHU. Prof. C.M. Jariwala.
2. Mishra, Shri Prakash. *Concept of natural justice and its application in domestic inquiry.* BHU. Shri V.S. Chouhan.
3. Pandey, Ashok Kumar. *Scope of protection available to civil servant employees of public undertakings and private sector : A comparative study.* BHU. Prof. M.N. Chaturvedi.
4. Sharma, Prabhakar. *Rural indebtedness : A socio-legal study.* BHU. Prof V.N. Singh.

5. Singh, Bindeshwar Prasad. *Legal aid in India.* BHU. Prof. R.K. Misra.

6. Singh, Mahendra Pratap. *Role of state and the law in development of industrial relations in India.* BHU. Prof. H.C. Srivastava.

7. Singh, Usha K. *Law relating to violence against women.* BHU. Prof. R.K. Misra.

8. Yadava, Surendra Kumar, *Public policy under Law of Contract.* BHU. Prof. V.N. Singh.

Education

1. Narayana Pillai, C. *Development and testing of criteria for the preparation of neoliterate books in Malayalam.* Kerala. Dr. K. Sivadasan Pillai.

Commerce

1. Agrawal, Vijay Kumar. *The personal policies and practices of aluminium industry of India with special reference to HINDALCO—A case study.* BHU. Dr. D.S. Mishra.

2. Diwakar Singh. *Industrial profile of Uttar Pradesh : A case study of Varanasi District.* BHU. Dr. V.S. Singh.

3. Giri, Balasubramaniam. *Managerial perception of organisational environment : A case study of Bharat Yantric Nigam, Allahabad.* BHU. Prof. D.P.N. Singh.

4. Giri, Nandishwar. *Marketing practice in small scale units in U.P.* BHU. Dr. B. Jha.

5. Khanna, Rajeev. *Indian import policy since mid seventies.* BHU. Dr. K.N. Sharma.

6. Krishna Kumar. *Corporate liquidations in India.* BHU. Dr. V.S. Singh.

7. Mishra, Ajoy Kumar. *Working of IRBI—A critical appraisal.* BHU. Dr. S.P. Srivastava.

8. Om Prakash. *Human resource accounting in Bharat Heavy Electrical Ltd.* BHU. Dr. M.B. Shukla.

9. Raj Kishor. *Profitability evaluation of Uttar Pradesh Forest Corporation.* BHU. Dr. M.B. Shukla.

10. Saraf, Arun Kumar. *A critical study of incentives and allowances under Income Tax Act.* BHU. Dr. S.N. Mehrotra.

11. Sharma, Kedar Nath. *Industrial relations in General Insurance Corporation of India.* BHU. Dr. D.S. Mishra.

12. Singh, Ajay Kumar. *Administration of State Level Taxes in Bihar.* BHU. Dr. D.S. Mishra.

13. Singh, Arun Kumar. *Advertising as sales promotion management in selected Public Sector Undertakings in U.P.* BHU. Dr. B. Jha.

14. Singh, Awadhesh Kumar. *Financial practices of small industrial units : A case study.* BHU. Dr. V.S. Singh.

15. Singh, Awadhesh Narayan. *Industrial democracy in public enterprises : A case study of selected units.* BHU. Dr. Shyam Chandra.

16. Singh, Basant Kumar. *Promotional role of the development banks : A case study.* BHU. Prof. R.A. Singh.

17. Singh, Birendra Pratap. *Human resource management in Banaras Hindu University with special reference to the non-teaching staff.* BHU. Dr. Shyam Chandra.

18. Singh, Desh Raj. *An appraisal of the working of lead bank in India : A case study.* BHU. Dr. A.R. Tripathi.

19. Singh, Jai Pratap. *Personnel practices in India telecommunication in U.P.* BHU. Dr. A.A. Ansari.

20. Singh, Kripa Shankar. *Progress and prospect of commercial banks in India since 1969.* BHU. Dr. K.N. Sharma.

21. Tiwari, Manoj Kumar. *Role of cooperative banks in rural development in U.P. : A case study.* BHU. Dr. A.R. Tripathi.

22. Trivedi, Ravi. *Administration of Sales Tax of Uttar Pradesh.* BHU. Dr. D.S. Misra.

23. Trivedi, Shashank. *An appraisal of the working of the Credit Authorisation Scheme in India.* BHU. Dr. A.R. Tripathi.

24. Vinod Kumar. *Industrial relation in Fertilizer Corporation of India : A case study of Phoolpur, Allahabad.* BHU. Dr. D.S. Mishra.

25. Yadava, Lala. *Management of working capital of small scale industrial units : A case study.* BHU. Dr. A.R. Tripathi.

Home Science

1. Mehrotra, Anita. *A study of vegetarianism and heart disease.* BHU. Prof. (Mrs.) A. Shukla.

2. Nanda, Snehalata. *Food and nutrition.* BHU. Prof. (Mrs.) A. Shukla.

3. Singh, Anjali. *A comparative study of the patterns of the role of home making in urban and rural women of Varanasi.* BHU. Prof. (Mrs.) A Shukla.

4. Singh, Arpana. *Home management related to child development and food and nutrition.* BHU. Dr. (Mrs.) N. Sant.

Business Management

1. Bhardwaj, Manoj. *Credit appraisal in Indian commercial banks : A case study.* BHU. Dr. Chhote Lal.

2. Gupta, Satya Prakash. *Systems application in modern defence management.* BHU. Dr. Deepak Barman.

3. Jha, Amar Nath. *A study on marketing personnel or marketing strategy development : A case study.* BHU. Prof. A. Ahmad.

4. Khattri, Pradeep Kumar. *Marketing of consumer products through cooperative societies : A case study.* BHU. *Prof. A. Ahmad.*

5. Mallik, Chandan Basu. *Advertising attitudes in India : A case study.* BHU. Prof. A. K. Shah.

6. Mankhand, Gautam. *Marketing strategy of selected calculator manufacturers in India.* BHU. Prof. A. Ahmad.

7. Misra, Atul. *Marketing practices and policies of management consultancy organisations in India.* BHU, Dr. H.C. Chaudhary.

8. Pandeya, Vishwanath. *Consumer Protection Legislation: A comparative study of India and the United States.* BHU. Dr. A.K. Agrawal.

9. Ramani, A.H. *An enquiry into investment costs and benefits derived of computer based information systems in selected organisations.* Kerala. Prof. S. Chidambara Iyer.

10. Singh, Alok Kumar. *Labour turnover in Indian Industries : A case study.* BHU. Dr. H.C. Chaudhary.

11. Sodhi, Manisha. *Trends in share prices in India.* BHU. Dr. Chhote Lal.

12. Srivastava, Arun Kumar. *Settlement of industrial disputes in India : A case study.* BHU. Prof. A.K. Shah and Dr. Yogendra Singh.

HUMANITIES

Philosophy

1. Bhattacharya, Manjula. *Jain dharma mein ishwarvad kee samalochana.* BHU. Dr. S.M. Jain and Dr. U.C. Dubey.

2. Chacko, Joseph. *A critical study of the ethical views of Jean Paul Sartre.* Kerala. Dr. K.C. Chacko.

3. Chakraborty, Minakshi. *Mysticism and philosophy of science.* BHU. Dr. S. Balakrishnan.

4. Dutta, Mala. *Brahma Siddhi ka darshnik adhyayan.* BHU. Dr. Kripa Shanker.

5. Kanhaiya Lal. *Sri Aurobindo darshan mein manushya evam jagat ka swaroop.* BHU. Dr. U.C. Dubey.

6. Maitreya, Manju. *Bharatiya darshan mein pratyaksha pramana.* BHU. Dr. U. Chaturvedi.

7. Natarajan, Tara. *Philosophy, phenomenology and Indian thought.* BHU. Prof. N.S.S. Raman.

8. Pandey, Angad Prasad. *Kant evam Gita darshan ka tulanatmak adhyayan.* BHU. Dr. U.C. Dubey.

9. Pandey, Prem Nath. *Tilak tatha Kant ke nitishastra ka tulnatmak evam sameekshatmak adhyayan.* BHU. Dr. S. Vijay Kumar.

10. Rai, Shailendra Kumar. *Mahatma Gandhi kee satya kee avadharana.* BHU. Dr. U. Chaturvedi.

11. Sataya, Phramaha Suthan Sing. *The existence and knowledge of God in Western philosophy of religion.* BHU. Dr. D.A. Gangadhar.

12. Shah, Jitendra Babulal. *Naya chakra ka darshnika adhyayan.* BHU. Dr. S.M. Jain and Dr. R.R. Pandey.

13. Sun Jeo Lee. *Advaita vedantik philosophy.* BHU. Prof. N.S.S. Raman.

Fine Arts

1. Ghosh, Anup Kumar. *Bharat kee vishalkaya murtiyan: Arambhik kal se 13vin shati tak.* BHU. Prof. R. Das Gupta.

2. Singh, Tarkeshwer. *Assam kee murti kala 6vin shatabdi se 13vin shatabdi tak.* BHU. Prof. R. Das Gupta.

Music

1. Chakravarty, Smarajit. *A critical study of the tradition and repertory of Bangali kirtan with a special emphasis as padavalikirtan.* BHU. Dr. (Smt.) Vimla Musalgaonkar.

2. Kavimandan, Ramchandra Vishwanath. *Pranav parivar ke sadasyon ka Bhartiya shastriya sangeet kee geya rachanaon ke kshetra main yogdan : Pranav Parivar—Pt. Onkarnath Thakur Pranav rang ke shishya-prashishya.* BHU. Dr. P.K. Dixit.

3. Santosh Kumari. *Rag aur ras.* BHU. Dr. (Smt.) Vimla Musalgaonkar.

4. Sharma, Neelam. *Hindi chalchitron ka geet-sangeet mein shastriya ragon ka upyog aur naveen prayog.* BHU. Dr. P.K. Dixit.

5. Susmita Bala. *Vaidic sandarbh mein sangeet aur chitrakala kee mool avadharanayen.* BHU. Dr. R.D. Dhakravarty.

Language & Literature

English

1. Dhoundiyal, Shree Krishna Datt. *Major trends of contemporary British and American poetry : A comparative study.* BHU. Dr. R.K. Asthana and Dr. R.S. Sharma.

2. Gupta, Vinita. *Treatment of family in the fiction of Eudora Welty.* BHU. Dr. A.K. Tripathi.

3. Hajela, Bharti. *Women characters in the last plays of Shakespeare.* BHU. Dr. Krishna Banerjee.

4. Jaiswal, Praveen Prasad. *Contemporary Indian English poetry : A study of major stylistic features.* BHU. Dr. M.K. Chaudhary and Dr. R.S. Sharma.

5. Munir. *Elmer Rice : A study of his plays in humanistic perspective.* BHU. Dr. J.B. Mishra.

6. Rao, Deepika T. *Contemporary Irish poetry.* BHU. Mrs. A. Nigam.

7. Sharma, Jyoti. *Robert Lowell and confessional poetry.* BHU. Dr. A. Nigam.

8. Singh, Alka. *George Eliot.* BHU. Dr. S.K. Sinha.

9. Singh, Ramesh Chandra. *Benjamian Disraeli as a political novelist.* BHU. Dr. G.B. Thampi.

10. Srivastava, Anil Kumar. *Thom Gunn.* BHU. Dr. S.N. Pandey.

Sanskrit

1. Dwivedi, Ashok Kumar. *Balmiki Ramayan mein kavya tatva.* BHU. Dr. Janardan Upadhyay.

2. Naresh Singh. *Shrimad Bhagwat mein Shankar vedant ka sameekshatmak adhyayan.* BHU. Dr. Rama Shankar Tripathi.

3. Pandey, Mridula. *Nirupat evam Uchchat Bhashya ka tulnatmak adhyayan.* BHU. Dr. Vyas Mishra.

4. Pathak, Ram Suresh. *Vyakaran sidhantam manjushya subarth vishyak sidhant sameeksha.* BHU. Dr. Chander Bhanu Sharma Bhardwaj.

5. Sharma, Gyanendra. *Vajasneya Rudra Mantreshu komyavidhina sameeksha.* BHU. Dr. H.R. Sharma.

6. Sharma, Hareram. *Muktawali man meyodyayon : Tulnatmak adhyayan.* BHU. Dr. N.R. Shrinivasan.

7. Shrivastava, Renu. *Sanskrit geet kavyon ka alochnatmak adhyayan.* BHU. Dr. Janardan Upadhyay.

8. Tiwari, Muniram. *Basubanyo : Vyaktitva kritraich.* BHU. Dr. S.P. Vyas.

9. Tiwari, Nandlal. *Mahavir Charit Bal Ramayan natkyostulnatmak adhyayanam.* BHU. Dr. C.M. Dwivedi.

10. Tripathi, Jagdamba Prasad. *Panchang sameekshanam.* BHU. Dr. Chandra Pandey.

Pali

1. Dhammasena, Dawalgama. *A study in the cultural history of India and Sri Lanka as described in the Vansa literature upto 12 century A.D.* BHU. Dr. P. Dubey.

2. Pandey, Rekha. *Lalit-vistar ka Baudh Sanskrit sahitya mein yogdan.* BHU. Dr. K. C. Jain.

Hindi

1. Dubey. Rudra Shankar. *Hindi bal sahitya aur shiksha shastra.* BHU. Dr. Vishwanath Mishra.

2. Ganesan, Sujata. *Mahadevi ka gadya sahitya.* BHU. Dr. Asha Pant.

3. Jaiswal, Suman. *Masoom Raza Rahi ke upanyason mein Muslim jeevan.* BHU. Dr. Pushpa Agrawal.

4. Mishra, Bharti. *Madhya Kalin Hindi kavya mein istri charitra.* BHU. Dr. Chandra Kala Tripathi.

5. Munni Devi. *Soorsagar mein pauranik kathaon ka sandarbh tatha unka sahityik mulyankan.* BHU. Dr. S.S. Shukla.

6. Pandey, Gopalji. *Siyaram Sharan Gupta : Vyaktitva aur krititva.* BHU. Dr. R.S. Dubey.

7. Pandey, Keshav. *Jatiya chetana aur Hindi ke upanyas, 1950 se 1980.* BHU. Dr. Rajmani Sharma.

8. Pandey, Kripa Shankar. *Tulsi ke kavya mein tatkalin aitihasik tathya.* BHU. Dr. S.S. Shukla.

9. Rai, Jai Prakash. *Lalit nibandh evam Dr. Kuber Nath Rai.* BHU. Dr. Shiv Karan Singh.

10. Ramesh Chanda. *Nirala kee kavitaon per Vivekananda ka prabhav.* BHU. Dr. M.N. Rai.

11. Sharma, Girija. *Adhunik Hindi kahani lekhikaon kee kritiyon mein nari manodasha kee abhivyakti, 1950-1980.* BHU. Dr. Ashok Singh.

12. Singh, Abhimanyu. *Manviya mulya evam Nirala.* BHU. Dr. Vidyottama Mishra.

13. Singh, Rajendra Prasad. *Adhunik Hindi kavya ke vikas mein Hariaudh ka yogdan.* BHU. Dr. R.S. Dubey.

14. Sinha, Chetna. *Hindi ke prayogdharmi natak, 1975 se 1985 tak.* BHU. Dr. R.S. Dubey.

15. Srivastava, Purnima. *Samkalin paripreksbya mein Kabir kee prasangikata.* BHU. Dr. S.P. Singh.

16. Verma, Kanchan. *Athaven dashak kee Hindi kahani.* BHU. Dr. Chauthi Ram Yadav.

Urdu

1. Ansari, Nasim Akhtar. *Delhi College : Tareekh aur Ilmi-wa-adabi khidmat.* BHU. Dr. Zafar Ahmad.

2. Kamil. *Mohammaden Educational Conference : Tareekh aur khidmat.* BHU. Dr. Zafar Ahmad.

3. Mohammad Arshad. *Saadat Hasan Manto : Hayat aur karname.* BHU. Dr. H.C. Nayar.

4. Mohammad Yunus. *Anjuman Taraqqi-I-Urdu tareekh aur khidmat, 1947 tak.* BHU. Dr. Haneef Naqavi.

5. Naheed Syda. *Josh Malihabadi : Hayat aur karname.* BHU. Dr. Qamar Jahan.

6. Saleha Begum. *Saleha Abid Husain : Shakhsiat aur karname.* BHU. Dr. H.C. Nayyar.

7. Usmana Khatoon. *Mahrrama' Maarif kee ilmi wa adabi khidmat.* BHU. Dr. Rasheed Khatoon.

Telugu

1. Aruna Bharathi N. *Techniques of teaching of Tamil to Hindi speakers.* BHU. Dr. G. Trivikramaiah.

2. Sarma Sanagavarapu, Ravi Sankara Rishikesa. *Sri Krishna Bhagavatam : A comparative study with Vyasa and Potana.* BHU. Prof. J.S.P. Rao.

3. Sita Devi, Mallampalli. *A critical study of Srinatha's Kashikhandam.* BHU. Prof. J.S.P. Rao.

Chinese

1. Asthana, Girija Rani. *Rural women in China and India.* BHU. Dr. Kamal Sheel.

2. Jha, Aditi. *Lu Xum and women character.* BHU. Dr. Kamal Sheel.

3. Rakesh Kumar. *Modern nationalism : Its historical origin in China and India.* BHU. Dr. Kamal Sheel.

History

1. Misra, Arun Kumar. *Microlithic industries of North India.* BHU. Dr. (Miss) V. Jaiswal.

2. Pandey, Chandravati. *Ancient Indian culture.* BHU. Dr. (Mrs) V. Tripathi.

3. Pandey Prem Sunder. *Economic history in early mediaeval India.* BHU. Dr. A.L. Yadava.

4. Paras Nath. *History of science and technology.* BHU. Dr. H.C. Bharadwaj.

5. Patil, Subhash Shankar. *History of Ichalkaranji' Jahangir.* Shivaji. Dr. V.S. Kadam.

6. Sharma, Om Prakash. *History of science.* BHU. Dr. H.C. Bharadwaj.

7. Singh, Prabha. *Juridical studies in the Katyayan Smriti.* BHU. Dr. A.L. Yadav.

8. Srivastava, Kamal Kumar. *Sanitary arrangements during early historic period.* BHU. Dr. T.N. Roy.

9. Tripathi, Shyam Bihari. *Saivism in South-East Asia.* BHU. Dr. (Mrs.) S.D. Singhal.

10. Upadhyay, Archana. *Archaeology of Middle Ganga Plains.* BHU. Prof. P. Singh.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Library Science

1. Subbaiah, Revuru. *Conceptual framework for an Indian National Agricultural Information System, Inagris.* Kerala. Prof. K.A. Isaac.

Psychology

1. Baxy, Rekha. *The effect of parental acceptance and rejection on child personality.* HS Gour. Prof. Jai Prakash.

2. Pandey, Ashok Kumar. *Contribution of social desirability factor to adjustment projective inventory scores.* Utkal.

3. Sharma, Kumudini. *A study of field dependent-independent cognitive style in relation to marital adjustment among educated married couples.* HS Gour. Prof. Jai Prakash .

4. Shri Krishna, K. *An inquiry into personality traits of university students in relation to addition with reference to certain socio-psycho variations.* Patel. Dr. J.C. Parikh.

Sociology

1. Bhattacharyya, Pradipnath. *Socio-political structure of the Jamatiyas : A critical study and analytical description of the Jamatiya folklore.* Calcutta.

2. Mishra, Saraswati. *Social adjustment in old age : A case study of retired government employees living in Chandigarh and Jabalpur.* D. Litt. Durgawati.

3. Ramesh Babu, Merugumala. *Institutionalised treatment of juvenile delinquents in Andhra Pradesh : A sociological analysis.* Andhra.

4. Talukder, Rochita. *The styles of adjustment of Bengali refugees : A sociological inquiry, 1950-1980.* JNU. Prof. T.K. Oommen.

Social Anthropology

1. Mahanta, Pradip Jyoti. *The role of Assam Vaishnavism in the making of Assamese life and culture : A study in an enduring tradition.* Gauhati. Dr. Birendra Nath Dutta.

2. Singh, Longjam Rajendra. *Physical variation between two sections of the Kabuis of Manipur and their ethnic position.* Gauhati. Dr. B.M. Das.

Political Science

1. Balakrishnan, Uday. *Trade unionism in Government with special reference to the P & T and the Railways.* Karnatak. Dr. K. Raghvendra Rao.

2. Khera, Vijay. *Ujjain sambhag mein nagar palikaon evam nagar nigamon ke rajnitik evam arthik pehluon ka adhyayan.* Vikram. Dr. P.K. Bhattacharya and Dr. (Smt.) S. Murthy.

3. Mohammad Omer Hewadyar. *Pashutunistan issue as an element in Afghan foreign policy : A legacy of imperialism* JNU. Prof. M.L. Sondhi.

4. Rodrigues, Valerian. *The theory of the Revolutionary Party in Marxism-Leninism.* JNU. Dr. Sudipta Kaviraj.

5. Siddalingappa, Parameshwar. *Impact of development agencies on the process of modernization : A case study of the backward classes of Athani.* Karnatak. Dr. R.T. Jangam.

Economics

1. Bandyopadhyay, Lily. *Planning towards organising rural landuse pattern.* IIT Kharagpur.

2. Jain, Neelima. *Madhya Pradesh mein krishi bhoomi prabandh evam sansadhanon ka swaroop : Ek vishleshnatmak adhyayan.* HS Gour. Dr, Kewal Chand Jain.

3. Patil, Amrit Tukaram. *A study of production and marketing of onion in Nasik and Dhule District in Maharashtra.* Nagpur. Shri P.K. Fadne.

4. Patil, Shivaji Jibhau. *The contribution of agricultural research and development of agricultural production in Maharashtra State.* MP Agrl. Shri R.G. Patil.

5. Patnaik, Manjurani. *Drought-proneness and human response : Case study of Orissa.* IIT Kharagpur.

6. Saksena, Aditya Narain. *Rail transport and regional development : A micro study.* Patel. Dr. J.H. Achvaryu.

7. Srinivasan, S. *Economics of grape cultivation in Dindigul and Nilakkottai areas in Madurai District.* Madurai.

8. Vijayalakshmi, Dandamudi. *Financial administration of Municipal Corporation in Andhra Pradesh.* Durgawati. Dr. Vinod Audholia.

Law

1. Gupta, Radha Raman. *Concept of Hindu marriage and its nullity.* Rajasthan. Dr. I.C. Saxena.

2. Rathi, Ram Lal. *The law relating to frustration of contract : A study of its emerging socio-legal trends in India.* Rajasthan. Prof. R.L. Verma.

Education

1. Brahadeeshwaran, D. *An alanysis of the effectiveness of Chemistry curriculum of the polytechnics.* Karnatak. Dr. K. Ramachandrachar.

2. Kanade, Vijay Krishnarrao. *A study of the utility of yogic exercises in the promotion of physical fitness and selected athletic events.* Nagpur. Dr. M. Gharote.

3. Khalwania, Nakshatar Singh. *Effectiveness of concept based science curriculum in developing cognitive structures and acquisition of process skills among high school students.* Panjab.

4. Mohanty, Sarat Chandra. *A critical appraisal of national adult education programme in Orissa.* Sambalpur. Dr. V.B. Shastry.

5. Sreekantan Nair, C.P. *A critical study of the education of the tribals in Kerala with special reference to Wynad Area.* Calicut. Dr. C.L. Anand.

Commerce

1. Agrawal, Sheo Kumar. *Madhya Pradesh mein sal beej evam us per adharit udyog.* Ravishankar. Dr. Ashok Parakh.

2. Bari, Matadeen. *A critical study of trade union in centrally governed undertakings in Jabalpur District after independence.* Durgawati. Prof. K.C. Jain.

3. Mazumdar, Apurbananda. *Electronics industry in India: Review of strategy and growth.* Gauhati. Dr. A.K. Sarma.

4. Panda, Dhaneswar. *The fishing industry of Orissa : A case study of Chilka Lake.* Utkal.

5. Shrivastava, Binod Bihari. *Educated unemployment : An economic study with reference to Bihar.* Magadh.

Home Science

1. Chanchal, B. *A study of consumer preferences and an assessment of the properties of the fabrics produced from textured yarns.* Anna.

Business Management

1. Eresi, Kalchetty. *Management of finance.* Karnatak. Dr. Bhagwati Prasad.

2. Garg, Ashok Kumar. *Fixed assets accounting in cement industry in India, 1974-1986.* Rajasthan. Dr. N.K. Sharma.

3. Jain, Dharam Chand. *Accounting practices and proedures in selected nationalised banks.* Rajasthan. Dr. D.C. Jain.

4. Maruthi Ram, P. *Financing of public enterprises : A study of the impact on cost of funds in select Central and Andhra Pradesh Government enterprises.* Osmania.

5. Mathur, S.C. *Performance appraisal of iron and steel industry in India.* Rajasthan. Dr. N.P. Agarwal.

DELHI INSTITUTE OF TECHNOLOGY

Old I. G. Block : Kashmere Gate, Delhi-110006

This Institute is looking for faculty members and other staff to fill regular positions as given below. The scales of pay for teaching staff would be revised shortly. The revised scales would be applicable from the date of joining. All the scales carry allowances as per Central Govt. rates.

Designation	Existing Scale of Pay (To be revised shortly).	Total Minimum emoluments in the Revised Scale at present.
Lecturer	700-1600	Rs. 2926/-
Asstt. Prof.	1200-1900	Rs. 4822/-
Professor	1500-2500	Rs. 6870/-

The recruitment rules (provisional), designations, number of vacancies and specialization for the various positions are as given below. The Institute reserves the right to change the vacancies.

Designation	No.	Specialization	
1. Professor	4+1 Nos.	Electronics & Communication Engg.	2
		Computer Engg.	2
		Head Computer Centre	1

Essential

(i) A Ph.D. Degree in the appropriate field.

(ii) 10 Years experience in teaching/research with at least 5 Years in teaching in an Institution with University level of teaching at graduate/post graduate levels/R & D Organization in the area of specialization.

(iii) Specialised knowledge in one or more fields.

Desirable

(i) Evidence of Research and Development activities by way of Publications/Patents.

(ii) Experience in guiding research with documentary evidence.

Age : Not exceeding 50 years.

Note-I

Qualifications are relaxable at the discretion of the Selection Committee in case of candidates otherwise well qualified. In case of Engineers with outstanding R & D work, the requirements of the Ph.D. degree and teaching experience can be waived.

Note-II

Recruitment Rules for Head Computer Centre are the same as for Professor Computer Engg.

2. Asstt. Professor :	7	Electronics & Comm. Engg.	4
		Computer Engg.	3

Essential

(i) Master's Degree in the Engg./Tech. from a recognised University or equivalent in the appropriate field.

(ii) 5 Years experience in teaching/research in the required field in an Institution with University level of Teaching/R & D organization.

Desirable

(i) Doctor's degree in the relevant field.

(ii) Evidence of Research and Development activities by way of Publications/Patents.

Age : Not exceeding 45 years.

Note-I

Qualifications are relaxable at the discretion of the Selection Committee in case of candidates otherwise well qualified. In case of Engineers with outstanding R and D work, the requirements of the Ph.D. degree and teaching experience can be waived.

3. Lecturers : (Engineering)	17	Electronics & Comm. Engg.*	6
		Computer Engg.*	6
		Electrical Engg.*	3
		Mechanical Engg.**	2

*One Post in each reserved for Scheduled Caste.

**One Post reserved for Scheduled Tribe.

Essential

(i) Master's degree in the appropriate field in Engg./Tech. from a recognized University or equivalent.

(ii) failing (i) above :

1st Class Bachelor's degree in the appropriate field of Engg./Tech. from a recognised Institute/University.

Note : Such a Candidate shall have to acquire M.E./M. Tech. degree within a period of 5 years of his appointment failing which he/she shall not be entitled to any further increment in the prescribed pay scale.

Age : Not exceeding 35 years.

4. Lecturers : (Non Engineering)	5	Mathematics**	2
		Physics*	2
		English	1

**One Post reserved for S. Tribe.

*One Post reserved for S. Caste.

Essential

(i) A IInd Class Master's degree or an equivalent degree of a recognised university or equivalent in the subject concerned.

Desirable

(i) Teaching experience of degree/post-graduate classes in a recognised Institute/University.

(ii) A Ph.D. degree in the appropriate field from a recognized University or equivalent.

Note

Provided that if a candidate does not possess a Ph. D./M. Phil/M. Litt. at the time of his/her appointment and does not qualify himself/herself for the award of Ph. D./M. Phil/M. Litt. degree from a recognised University in a subject which is being taught by him/her within a period of 8 years from the date of his/her appointment, he/she shall not be entitled to any further increment after the expiry of the said period of 8 years till such time he/she fulfils the above mentioned requirements.

Age : Not exceeding 35 years.

5. Programmer : 1 Scale Rs. 2200-4000 (Revised)

Essential

(i) (a) Master's Degree in Operation Research, Statistics, Science, Arts, Economics or Mathematics from a recognised University/Institution or equivalent with a Diploma/Certificate from a recognized University/Institution in Computer Programming.

(i) (b) A Bachelor's degree in Engineering or Master's degree in Computer Applications from a recognised University/Institution or equivalent.

(ii) 3 Years experience of data processing work in a Computer Centre in case of (i) (a) and 1 year experience in Computer applications in case of candidates having qualifications mentioned in (i) (b).

Desirable

(i) Proficiency in FORTRAN, COBOL, PASCAL, BASIC, C

(ii) Knowledge of System software.

Age : Not exceeding 35 years.

In case of candidates otherwise suitable the qualifications and experience are relaxable.

6. Hardware Engineer : 1 Scale Rs. 2200-4000 (Revised)

Essential

(i) Bachelor's Degree in Electronics Engineering/Computer Engineering from a recognised University/Institution or equivalent.

(ii) 1 year experience of working on a Computer/Microprocessor for design and development work.

Desirable

(i) Experience of maintenance of peripherals and designing interfacing circuits.

(ii) Proficiency in programming.

Age : Not exceeding 35 years.

7. Dy. Administrative Officer : 1 Scale Rs. 2375-3500 (Revised)

Essential

(i) Degree of a recognised University or equivalent.

(ii) 7 Years experience including 4 years experience in a supervisory capacity in an Institution or Govt./Autonomous/Business Organisations.

Desirable

(i) Knowledge of Govt. Rules and Regulations.

(ii) A degree in Business Management/Administration.

Age : Not exceeding 40 years.

8. Director of Physical Education* : 1 Scale of Pay Rs. 2200-4000 (Revised)
*Reserved for S. Caste.

Essential

(i) Master's Degree in Physical Education of a recognised University or equivalent.

OR

At least second class Bachelor's degree with a degree or post graduate diploma in physical education from a recognised university or equivalent.

(ii) 3 Years experience in imparting training in physical Education/Sports in National Institution or/and Welfare Camps.

Age : Not exceeding 35 years.

9. Workshop Supdt : 1 Scale of Pay Rs. 2200-4000 (Revised)

Essential

A Bachelor's degree in Mechanical Engineering of a recognised university or equivalent with atleast 3 years experience in a large engineering workshop.

OR

3 Years diploma in Mechanical Engineering/Production Engineering from a State Board of Technical Education with atleast 7 years experience in a large engineering workshop.

Age : Not exceeding 40 years.

10. Store Officer : 1 Scale of Pay Rs. 2000-3000 (revised)

Essential

(i) Degree of a recognised University or equivalent.

(ii) 5 years experience in a Govt. or semi-Govt. Department or Industrial or Technical Institute concerning Purchase, Storage and issue of stores.

(Qualification relaxable at the Selection Committee's discretion in case of candidate's otherwise well qualified).

Desirable

(i) Diploma in Engineering or equivalent.

(ii) Knowledge of Govt. Rules and Regulations and accounting procedure.

Age : Not exceeding 35 years.

11. Project Officer : 1 Scale of Pay Rs. 3000-4500 (Revised)

Essential

(i) Bachelor's degree in Civil Engineering or equivalent.

(ii) 7 year's experience in Administration, supervision, planning or teaching in a Technical Institution/department/project.

Desirable

(i) At least 3 years experience in Planning and maintenance of Civil Work.

(ii) At least 3 years experience of Project formulation, Budget preparation, Accounting and purchase procedures and Govt. rules and regulations for day to day management of the office.

Age : Not exceeding 50 years.

(Qualifications relaxable at the discretion of the Selection Committee in case candidates otherwise well qualified.

Note : 1. (For all posts reserved for S.C. and S.T.)

The qualification(s) regarding experience is (are) relaxable at the discretion of the Selection Committee in case of candidates belonging to SCs and STs if at any stage of selection, the Selection Committee is of the opinion that sufficient number of candidates from these communities are not likely to be available to fill up the vacancies reserved for them.

Note 2

Age relaxable for Govt. Servants for all posts as per Govt. Rules.

Delhi Institute of Technology was started in 1983 under Delhi Administration. Now it has been converted into an Autonomous Institute administratively. It is fully financed by the Government. The management of the Institute has been handed over to the Board of Governors. The Institute has already established an excellent facility in Computer Education, commensurate with the need. Electronic Media like Video Tape Courses of full semester length obtained from leading U.S. Universities from the resource materials for a number of Courses in Electronics and Computer Engg. There is a comprehensive plan for growth of this Institute in terms of physical expansion and attainment of excellence in Teaching/R and D activities. It is to be built on a 150 Acres of Land near Palam area. Therefore, the Institute is looking for dedicated faculty members who can help to translate the plan into reality.

There is an ample freedom of growth for the right type of candidates. The Institute plans to undertake Industrial R and D Consultancies, Technology Transfer Programmes and Establishment of Science and Technology Park as an integrated Scheme alongwith teaching which is presently confined to Bachelor's Degree in Electronics and Communication. Engg. and Computer Engg.

Completed applications forwarded through proper channel, in case of employed candidates, alongwith a crossed Indian Postal Order of Rs. 10/ (Rs. Ten Only) as the application fee, drawn in favour of Project Officer, Delhi Institute of Technology, K. Gate and payable at GPO DELHI—6 should reach the Institute by **27th Nov., 1987.** There is no application fee for S.C. and S.T. Candidates. Advance copy of the application may be sent, if necessary. Those called for Interview will be reimbursed travelling expenses to and fro by the shortest route upto IInd Class Railway Fare. It may be possible to provide Residential accommodation on a restricted basis to the staff joining the Institute. It is also possible to offer appointments on the basis of deputation to the posts of the Professors/Asstt. Professors, if the candidate so desires. Initially, the period of deputation shall be one year which could be extended further.

The format of the application form is as given below:

1. Name:
2. Date of Birth:
3. Father's/Husband's Name:
4. Address:
5. Name of the Post for which Applying :
6. Educational Qualifications: with the year of passing and percentage of marks/class (onward from 10+2 or equivalent),
7. Employment with the name of Employers, Remuneration and period:
8. Research experience and List of Publications:
9. Any other experience which fits with the requirements of the Job:
10. Professional Memberships and any other distinction:
11. How do you think you are a fit Candidate for a Challenging Teaching and Research Position at this Institute?
12. Do you wish to be considered for appointment on the basis of Deputation?
13. No. and Names of the Testimonials attached.
14. Names and Address of two referees who are/(were) connected with your Technical/Scientific/Academic/Professional work.
15. No., Date and Place of Issue of the Postal Order.

(Please use additional sheets of paper wherever needed and send copies of one or two Research publications which you consider to be the most important. Application should be neatly typed).

Dated:

Place:

Signature of the Applicant

Project Officer, DIT.

CLASSIFIED ADVERTISEMENTS

BHARATHIAR UNIVERSITY : COIMBATORE–641 046

Advertisement No. 6998/E1/87 **Dated: 29-10-1987**

Applications are invited for the following posts :

	No. of Posts	Specialisation
I DEPT OF MATHEMATICS		
Professor	1	Computer Mathematics/Programming Languages/Operations research/
Reader	2	Functional Analysis/Optimisation Techniques/Differential Equations/ Algebra
II DEPT OF PHYSICS		
Reader	1	Applied Optics/Laser Physics/Solid State Devices/Energy Physics/
Lecturer	2	Superconductivity
III DEPT OF CHEMISTRY		
Reader	1	Organic Natural Products Chemistry/ Heterocyclic Chemistry
Lecturer	2	Natural Products-Chemistry/Organic Photochemistry/Modern Reagents or electrochemistry
IV DEPT OF BOTANY		
Professor	1	Genetics/Forest Botany/ Photochemistry/Plant Anatomy/
Lecturer	2	Ethnobotany
V DEPT OF ZOOLOGY		
Reader	1	Entomology/Animal Physiology/ Endocrinology/Fishery Biology/Histo Chemistry
Lecturer	1	Neuro Physiology/Molecular Biology/Nematology/Fishery Biology/Ecology/Genetics
VI DEPT OF ENVIRONMENTAL STUDIES		
Professor	1	Environmental mutagens/
Reader	1	Terratogens/Microbiology/
Lecturer	2	Pollution/Urban Systems/ Environmental Physiology
VII DEPT OF ECONOMICS		
Reader	2	Agricultural Economics/ Econometrics
Lecturer	1	Local Finance/Industrial Economics
VIII DEPT OF SOCIOLOGY		
Professor	1	Industrial Sociology/Rural Development/Rural Sociology
Reader	1	Urban Sociology/Rural Development/Rural Sociology
IX DEPT OF POPULATION STUDIES		
Professor	1	Population Economics/ Social Demography/
Reader	2	Migration/Fertility

Qualification and Experience

(a) Professor

Consistently good academic record with first or second class (not below 55% or 'B' plus) Post-Graduate degree in the snbject or related subject and a Ph.D. degree in the subject with not less than 10 years of Post-Graduate teaching and/or research experience out of which not less than 3 years should be in a cadre not below than that of a Reader in the University and published research work of high standard. Evidence of being actively engaged in research and experience in guiding research work at Doctoral level.

(b) Reader

Consistently good academic record with first or second class (not below 55% or 'B' plus) Post-Graduate degree in the subject or related subject and a Ph.D. degree in the subject with not less than 5 years of Post-Granduate teaching and/or research experience out of which not less than 3 years should be in a cadre not below than that of a Lecturer in the University and published research work of high standard. Evidence of being actively engaged in research and experience in guiding research.

(c) Lecturer

Consistently good academic record with first or second class (not below 55% or 'B' plus) Post-Graduate Degree in the subject or related subject and a Ph.D. degree in the subject with not less than 2 years of Post-Graduate teaching and/or research experience.

DESIRABLE

Publication of research work of high standard in the subject.

SCALE OF PAY

Professor : Rs. 1500-60-1800-100-2000-125/2-2500
Reader : Rs. 1200-50-1300-60-1900
Lecturer : Rs. 700-40-1100-50-1600

To be revised as per UGC revised scale of pay.

The Syndicate reserves the right to fill or not to fill any or all of the above posts.

MAXIMUM AGE AS ON 1.10.87

For Professors	:	50 Years
For Readers	:	45 Years
For Lecturers	:	40 Years

COMMUNAL RESERVATIONS

Necessary Reservations for SC/ST, BC will be made as per rules. In case SC/ST and BC candidates with suitable qualification and experience are not available, other candidates with be considered against these vacancies as per rules.

Any candidate applying for more than one post shall send separate application for each post.

Application form can be had from the Registrar, Bharathiar University, Coimbatore-641 046 on requisition accompanied by a self addressed and Rs. 1.40/- stamped envelope (25cm x 10cm). Name of the post for which the application is intended shall be specified in the requisition.

Attested copies of certificates showing qualifications, Age, Community, Experience etc., should be sent along with application in the prescribed form (in Eight Copies) together with Registration Fee of Rs. 10/- in the form of Crossed Indian Postal Order dated not earlier than **1.10.1987** drawn in favour of the Registrar, Bharathiar University, Coimbatore-641 046.

Candidates in service shall submit their applications through proper channel.

Completed application should reach the Registrar on or before **30.11.1987**.

Incomplete applications and applications without the required Registration fee will not be considered.

REGISTRAR

ANNAMALAI UNIVERSITY
ANNAMALAINAGAR
RAJAH MUTHIAH MEDICAL COLLEGE

Notification No. 12/87

Dated : 20-10-1987

Applications are invited in the prescribed form for the following posts in the Rajah Muthiah Medical College of this University :

Sl. No.	Name of the Post	Number of Post
1.	Professor of Pathology	1
2.	Professor of Dermatology	1

Qualifications

For Sl. No. 1

(i) M.D. (Pathology)/M.D. (Pathology & Bacteriology)/M.D. (Pathology with Bacteriology)/Ph.D. (Pathology)/ D.Sc. (Pathology)

(ii) Experience as Reader in Pathology for 4 years in a recognised Medical College.

For Sl. No. 2

(i) M.D. (Dermatology)/M.D. (Dermatology & Venereology)/M.D. (Medicine) with diploma in Dermatology.

(ii) Experience as Reader in Dermatology for 4 years in a recognised Medical College.

Scale of Pay

Rs. 1500-60-1800-100-2000-125/2-2500, with usual allowances.

(Pending revision in the light of the recommendations of the University Grants Commission).

Higher start will be considered keeping in view long experience, special qualifications etc.

Payment of non-practising allowance is admissible as per University rules.

Candidates invited for interview will be paid a single first class to and fro railway fare.

Those who are in service should route their applications through proper channel.

Application forms can be had from the undersigned on payment of Rs. 10/- by cash/money order/postal order (not refundable). Filled in applications (with 5 additional copies) should reach the undersigned on or before the **25th November, 1987**.

R. Rajamanickam
REGISTRAR

GUJARAT AYURVED UNIVERSITY
Administrative Bhavan, Hospital Road, Post Bag No. 4
JAMNAGAR

Applications are invited for the following vacant posts in the University.

Sr. No.	Name of the Post	Pay Scale Rs.	No. of Post
1.	Professor-1—Basic Principles Professor-1--Kaumarbhritya	1500-2500 (LIKELY TO BE REVISED)	2
2.	Reader-1—Shalya Shalakya Reader-1—Shalakya Reader-1—Basic Principles	1200-1900 (LIKELY TO BE REVISED)	3
3.	Lecturer-1—Kaumarbhritya	700-1600 (LIKELY TO BE REVISED)	1
	Lecturer-1—Swasthvritt	2000-3500	1
4.	Senior Physician (Siddha)	3000-4500	1
5.	Biochemist	3000-4500	1
6.	Pharmacognocist	3000-4500	1
7.	Pathologist	3000-4500	1
8.	Chief Account Officer	3000-4500	1
9.	Darshanik	2500-4200	1
10.	Bhashashastri	2500-4200	1
11.	Account Officer	2200-4000	1

Details of pay scale, qualification, age and experience in the above posts should be submitted in the prescribed form which can be had by post from the Registrar, Gujarat Ayurved University, Jamnagar by sending a self-addressed envelope 11" x 5" size duly stamped of **1-40 Ps.** alongwith a request indicating the name of the post so as to reach on or before **30-11-87**. The last date for receipt of complete applications is **24-12-87**. Only Indian National need apply.

The University reserves the right to fill up or not to fill up the posts advertised and/or to call only selected candidates for interview.

R.M. Joshi
REGISTRAR

TELUGU UNIVERSITY
HYDERABAD

Advt. No. 4/87 Dated : 30-10-1987

Applications in the prescribed form are invited for the following posts in the University Service so as to reach the undersigned on or before **28.11.1987.**

POSTS

S. No.	Department	Professor	Reader	Lecturer
A.	**HYDERABAD HEAD QUARTERS**			
	(i) Department of Lexicography	—	—	1
B.	**RAJAHMUNDRY CAMPUS**			
	(i) Department of Devotional and Lyrical Poetry	—	1	—
C.	**SRISAILAM CAMPUS**			
	(i) Department of History and Culture of Telugu Speaking People	1	1	—
	(ii) Department of Epigraphy and Written Records	—	1	2
	(iii) Department of Archaeology and Architecture	—	1	—

Scale of Pay

1. Professor : 1500-60-1800-100-2000-125/2-2500
2. Reader : 1200-50-1300-60-1900
3. Lecturer : 700-40-1100-50-1600

Note

(i) All posts are temporary and likely to be made permanent.

(ii) The University reserves the right to fill or not to fill up any of the posts advertised.

(iii) Relaxation, where necessary, may be considered as per UGC norms.

(iv) **Reservation of posts is as follows :**

Readers
1—S.C.
1—P.H.C/O.C
2—O.C.
Lecturers
1—S.C.
1—S T.
1—B.C. (C)

(v) If qualified and eligible candidates from the reserved categories as shown above are not available, candidates belonging to other communities will be considered for appointment for one year temporarily.

Application forms together with the qualifications prescribed for the posts can be had from the Registrar, Telugu University, Kala Bhavan, Saifabad, Hyderabad—500 004 on payment of Rs. 5.00 by Demand Draft payable to the Registrar, Telugu University. If application forms are required to be sent by post, a self addressed and stamped (with postage stamps worth Rs. 1-60) envelope of 26 cms x 12 cms shall also be enclosed to the Demand Draft.

T.D. Prasada Rao
REGISTRAR

GOA UNIVERSITY
P. O. SANTA—CRUZ,
BAMBOLIM,
GOA—403 005.

Dated : 28th October, 1987

With reference to this University's advertisement dated 1st September, 1987, it is notified for the information of all concerned that the number of vacancies of the post of Lecturer in History has been raised to TWO instead of ONE as advertised earlier. In view of this change, the last date for receipt of applications for the post of Lecturer in History has been extended upto **15th December, 1987.**

Similarly applications are also invited for ONE post of Lecturer in Sociology so as to reach the undersigned on or before **15th December, 1987.**

For all other details, our advertisement dated 1-9-1987 may be referred to The terms and conditions remain unchanged.

Dr. S. K. Gandhe
REGISTRAR

ASSOCIATION OF INDIAN UNIVERSITIES
AIU HOUSE, 16 KOTLA MARG, NEW DELHI-110002

Applications from Indian citizens are invited for the following post in the prescribed form available on payment of Rs. 2/- from the Office of the Association :

Research Officer

Pay Scale : Rs. 2200-4000 (Revised)

Qualifications

Essential : Good Master's Degree in Economics, Education or Social Sciences.

Desirable : Doctorate in Education or in Economics, with 5 years' experience in Research preferably in the area of Economics of Education.

Job Description

The incumbent will be responsible for handling research projects and organising seminars, conferences and workshops relating to university education.

Persons with experience of working in university level institutions will be preferred and can be considered on deputation terms.

The post carries Dearness and other allowances generally at the Central Government rates. Total emoluments at the initial of the Scale amount to Rs. 3256/-, including HRA and Special Allowance. Higher start in the prescribed pay scale may be given in deserving cases. Relaxation in any of the requirements may be made in exceptional cases. The post is for one year in the first instance but is likely to continue on a regular basis. The Association reserves the right not to fill up the vacancy advertised, if the circumstances so warrant. SC/ST/Ex-servicemen will be given preference. Canvassing in any form by or on behalf of a candidate will be a disqualification. Outstation candidates called for interview will be paid single second class rail fare to and fro by the shortest route.

Applications complete in all respects should reach the Office by **30 November 1987.** Persons already in service should apply through proper channel. Applications received after the last date or without complete information will not be entertained.

TAMIL UNIVERSITY

THANJAVUR-613001

Advt. No. A1/8855/87 **Dated : 22.10.87**

Applications in the prescribed form in quadruplicate are invited for the following posts in this University. Last date for receipt of application is **30.11.87** before close of office.

Sl. No.	Department	Prof.	Associate Prof.	Lecturer
1.	Centre for Underwater Archaeology	—	1	—
2.	School of Indian Languages	1	1	—
3.	Linguistics	2	1	1
4,	Literature	1	1	1
5.	School of Philosophy	1	1	1
6.	Siddha Medicine	—	1	1
7.	Sculpture	—	—	1
8.	Archaeology	—	1	1
9.	Ancient Science	—	—	1
10.	Ancient Industries	—	—	1
11.	Translation	1	1	1
12.	Centre for Asian Studies	—	—	1
13.	Tamil for Science	—	—	1
14.	Painting	1	1	—
15.	Dance	1	1	—
16.	Architecture	—	—	1
17.	Rare Paper Manuscripts	—	—	1
18.	Folklore	1	—	—
19.	Epigraphy	—	1	1
20.	Tribal Linguistics	—	1	—
		9	12	14

Scales of Pay

Professors : Rs. 1500-60-1800-100-2000-125/2-2500

Associate Professors : Rs. 1200-50-1300-60-1900.

Lecturers : Rs. 700-40-1000-50-1600

(The scales will be revised when the University Grants Commission recommendations are implemented).

Candidates must furnish a Crossed Indian Postal Order to the value of Rs. 10/- (Rupees ten only) (Rs. 2.50 for Scheduled Caste and Scheduled Tribe Candidates) for application blanks and details of qualifications etc. drawn in favour of the Registrar, Tamil University, Thanjavur 613 001 and payable at Thanjavur with a self-addressed envelope (31 Cm. X 13 Cm.) bearing postage stamps to the value of Rs. 2.60. The cost of the application blanks will not be refunded under any circumstances. 18% of the posts are reserved for SC/ST candidates.

In the case of candidates applying from countries other than India, to avoid postal delay, the Bio-data of candidates with copies of publications and a fee of Five U.S. dollars by International Money Order should be sent to reach the Registrar before the last date indicated above.

Dr. P. Chinnian
REGISTRAR

DAYALBAGH EDUCATIONAL INSTITUTE

(Deemed University)

Dayalbagh, Agra-282 005.

Applications are invited in the prescribed form for the following posts :

I. Readers : one each in :

1. Computer Science and Applications.
2. Physics (Specialisation in Electronic Science).
3. Mathematics.
4. Drawing and Painting.
5. Sanskrit.
6. Hindi.

II. Lecturers : in—

1. Computer Science and Applications-Two posts.
2. Electrical Engineering-Two posts
3. Music (Vocal)-1.
4. Psychology-1.
5. Hindi-1.
5. Physics (Specialisation in Electronic Science)-1.
7. Mathematics-Three posts.
8. Chemistry-1.

III. Teaching Assistant (Electrical Engineering)-1.

Pay Scales (Rs) : For Readers : 1200-1900; For Lecturers : 700-1600 plus allowances; For Teaching Assistant : 1,000/- (consolidated) for graduates in Engineering with atleast 70% marks and 1,100/- (consolidated) for post-graduates in Engineering with I division.

Total Monthly Emoluments (Rs.): Readers 3192/-; Lecturers 2173/-.

Note : 1. Prescribed application forms alongwith details of minimum qualifications can be had from the office of the Registrar of the Institute on payment of Rs. 10/- by cash at counter or by sending a bank draft accompanied by a self addressed and stamped envelope of the size 22×10 cm with stamps worth Re. 1/- for ordinary post or Rs. 5.50 for registered post.

2. Applications complete in all respects alongwith enclosures and registration fee of Rs. 10/- should reach the Registrar of the Institute latest by 12 Dec. 1987.

3. All payments be made either by cash at counter or by bank draft drawn in favour of 'Dayalbagh Educational Institute' payable at Agra.

4. Separate application be made for each post.

5. The number of posts may vary according to need.

6. Government/Semi-Government employees should apply through their employers or produce a no objection certificate at the time of the interview.

7. SC/ST candidates will be preferred if found otherwise suitable.

8. Incomplete applications and those not accompanied by testimonials and/or registration fees will not be considered.

9. It is likely that some of the posts may not be filled in immediately.

10. Superannuated persons are not eligible for employment.

11. An applicant for higher post may be offered lower post.

REGISTRAR

TATA INSTITUTE OF SOCIAL SCIENCES

DEONAR, BOMBAY 400 088
No. Admn./Advt./87
Dated : October 13, 1987

Applications are invited, in the prescribed form only, for the post of Assistant Registrar (Publications) in the pay scale of Rs. 700-40-1100-50-1600. The application form, along with details of qualifications, experience, etc., prescribed for the post, should be obtained from the above address, either in person or by post, alongwith a stamped (Rs. 2.00) self-addressed envelope superscribed "REQUEST FOR APPLICATION FORM FOR ASSISTANT REGISTRAR (PUBLICATIONS).

Total emoluments at the minimum of the pay scale will be Rs. 2254.00 per month, and at the maximum of the scale will be Rs. 2848.00 per month. Last date for receipt of completed application form is **20.11.1987.**

N. Krishnamoorthy
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

P.O. IIT, POWAI, BOMBAY-400 076

Advertisement No. C-158/87

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The post is reserved for the candidates belonging to SC/ST communities. If no SC/ST candidate is found suitable, the post may be filled by recruiting a general candidate.

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OR

Master's degree with specialisation in Water Resources/Hydraulic Engg./Hydrology, with minimum of 60% marks or 7.0/10.0 CPI or equivalent.

3 Posts are reserved for Scheduled Caste candidates and 2 posts are reserved for Scheduled Tribe candidates. General candidates are also eligible to apply who will be considered only if no suitable Scheduled Castes or Scheduled Tribe candidates are available for appointment to the vacancies reserved for them.

The above mentioned post carry usual allowances as admissible under the Central Government Rules. Age will be relaxable for persons already in service in the Institute and other Govt·/Semi-Govt./Autonomous Organisations as well as candidates belonging to SC/ST community, retrenched employees of Defence Services and physically handicapped persons, as per rules of the Government of India.

Age will be determined as on 15th December, 1987.

Persons already employed in Govt./Semi-Govt./Autonomous Bodies should apply through proper channel. Application not forwarded through proper channel may not be considered.

Application forms may be obtained by 1st December, 1987 from the Chief Administrative Officer. National Institute of Hydrology, Jal Vigyan Bhavan, University of Roorkee Campus, Roorkee-247667 (U.P.) by sending a self addressed envelope of the size 12x28 cms. Application forms duly completed in duplicate with copies of all testimonials alongwith an application fee in the form of Indian Postal Order of Rs. 8/- (SC/ST candidates are exempted from payment of fee) payable to the National Institute of Hydrology at the Roorkee, University Post Office should reach the Chief Administrative Officer, National Institute of Hydrology, Jal Vigyan Bhavan, University of Roorkee Campus, Roorkee-247 667 (UP) on or before **15th December, 1987.**

The appointment to the Post carries with it the liability to serve anywere in India.

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg,
New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157

16/11

University News

MONDAY, NOVEMBER 16, 1987 Rs. 1.50

Prof. Moonis Raza, Vice-Chancellor, University of Delhi, who delivered the convocation address at the sixth annual convocation of the School of Planning and Architecture, awarding the degree to one of the students.

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Note

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(b) Merit Scholarships and limited financial assistance in deserving cases available.

(c) There is reservation of seats for Scheduled Caste (15 per cent), Scheduled Tribe (7½ per cent) and Backward Class (5 per cent) as per University regulations with concessions of 5 per cent marks in the aggregate provided they satisfy the selection criteria. 3 per cent seats are reserved for Physically Handicapped candidates, if they satisfy the selection criteria.

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All eligible candidates will take a written test to be held at different centres in India on Sunday, February 21, 1988.

Applications

For application forms and relevant information, write to The Assistant Registrar, Department of Commerce and Business Management, Punjab University, Chandigarh-160 014 enclosing therewith a crossed Indian Postal Order/Bank Draft payable at Chandigarh for Rs. 50 in favour of REGISTRAR, PANJAB UNIVERSITY, CHANDIGARH and a self-addressed envelope (29 x 18 cms.) bearing Rs. 3.80 stamps.

Requests for application forms received by post after December 30, 1987 will not be entertained. Application forms will also be available at the office of the Department between 3.00 p.m. and 5.00 p.m. on all working days upto **January 6, 1988**.

—Cheque or Money Order or Cash Payment not Accepted.
—Telephonic Enquiries will not be entertained.
—Last Date for Receipt of Completed Applications: January 7, 1988.

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UNIVERSITY NEWS

OL. XXV NOVEMBER 16
o. 46 1987
rice Rs. 1.50

Weekly Chronicle of Higher
ducation published by the
ssociation of Indian Universities

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Editor :
SUTINDER SINGH

What are the Differences ?

J. N. Kapur*

I have been a visiting professor at two USA, three Canadian and two Australian Universities for a total period of about five years. I have also taught in two Indian Universities and have been a Vice-Chancellor of a third Indian University for a total period of about forty years. I have been asked about the differences I have noticed in Indian and Western systems of Education. About fourteen years ago, I expressed my views in two books—Current Issues in Higher Education in India; and Current Issues in Higher Education in various countries of the World—both published by S. Chand and Co, Delhi. In the present article I am updating my impressions about the Western Education System.

Higher Education is not a Birthright

The admissions to Universities are highly restricted. Only those who have proven aptitude for higher education can get admission. The seats in every course are regulated by the facilities available. Admissions to universities are made strictly on merit. There is enough counselling at schools and students who do not have enough aptitude for higher education are advised accordingly and the advice is gracefully accepted by the students and their parents. Students are willing to opt for other vocational courses. In any case, higher education is not regarded as a birthright. Usually students getting below sixty per cent marks have no opportunities of getting admissions to universities.

Higher Education is Relatively Costly

The cost per student is much higher both for the student and the State. Students usually pay for their higher education either through bank loans or through part-time work. There are some students who are supported, by their parents, but even when parents are able and willing to support, many students consider it more honourable to support themselves through bank loans and part-time work.

In some universities, there is a 'cooperative' system i.e. local industries and universities cooperate. Students study and work in alternative trimesters and the universities arrange their work in those industries which are relevant to their studies.

Students are Highly Motivated

The reasons are :

(i) Students have worked hard on their studies to get admissions to universities;

(ii) Students at universities very often pay for their own education;

(iii) They are almost sure of getting better jobs than they would

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**Indian Institute of Technology, New Delhi-110016* have got without university education;

(iv) There is complete fairness in the job market and student knows that the job he gets will depend on his intrinsic competence and not just on the examination results—it will certainly not depend on his connections; and

(v) There is continuous internal evaluation in which every student has faith and the student has to do continuous hard work to get reasonably satisfactory grades.

Selection of Teachers are Fair

In every appointment in a college or a university, there is a selection committee consisting of some members of the department and some members from outside the department. There are no outside experts. However there are well-defined procedures and norms for these selection committees—sometimes given in handbooks of 80-100 pages. Applications are invited. On each short-listed candidate, expert opinions of 4-6 referees are obtained. The candidate is invited to give an open seminar in which apart from members of the selection committee, students and teachers can ask him questions and form their opinion of his knowledge and teaching capacity. He also meets members of the faculty individually. At the end of his visit, opinions of students and teachers are pooled together by the selection committee. This process will go on for all short-listed candidates. The process may take 3-6 months. At the end, the selection committee will consider all the inputs and give its recommendation to the university authorities with the reasons in writing in detail. The system is so open that no unfair recommendations can work.

In our system, which is highly secretive and closed, recommendations can and do work. Even when the selection is fair, there is no confidence in it, because of its lack of openness. The "outside experts" interview candidates for ten or fifteen minutes and take decisions. Inspite of all secrecy, some experts are approached and pressurised and they are willing to be 'influenced' because they are not accountable for their actions and they have not to give any reasons for their actions except to a small group in a closed room.

A Teacher's Probation Period is Long

It is usual for a teacher to take five to six years to get a tenure i.e. to get confirmed. He is being constantly judged, not just by his head of department, but also by his peers and students. He is judged through opinions of his students, as demonstrated through student reaction surveys, through the opinions of senior faculty members and through his research publications. He of course knows, through a written document, as to what is expected of him. Thus he is expected to keep an above-average teaching record, he is expected to do good work on the committees on which he is expected to work, he is expected to produce a number of good papers in referred journals and he is expected to participate in national conferences. At any time, if his record is unsatisfactory, his contract can be terminated but well-documented reasons will be given to him. At the time of confirmation, again a committee considers all documents concerning his teaching, research, committee work, etc. and will give reasons why he should or should not be confirmed. His confirmation will not depend just on a good report by his head of department.

Even when a teacher is confirmed, he has to continue to work hard for his promotion which will again be given by objective consideration of his merits and he knows in advance what he has to do to earn his promotion.

Motivation for Sustained Good Work by Teachers

It may take 15-20 years for a university teacher to become a professor and there is sufficient motivation for him to do good work in this period, specially since he knows that his promotion will depend on the work he does and not just on the good relations with the authorities. Good relations are desirable, but are far from sufficient for securing promotions.

After a teacher becomes a professor, he cannot relax and say "Why should I work since I have no more promotion to seek ?" There are two components in the system which can still make him put in hard work : (1) Student reaction surveys do not make a distinction between an assistant professor and a professor. In many universities, teachers are arranged according to these surveys and those who fall below the median have a sense of humiliation. Even a senior professor cannot afford to be lax in his teaching ; he is constantly being examined by his students ; and (2) National research funding agencies give grants based on his work. If a professor does no research or does trivial research, he does not get a

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national grant and this is sufficient to bring him down in the opinion of his peers. Even a reduction in grant is regarded as a calamity to be avoided. Some departments do not give funds to their teachers for travel or even for photocopying. They are expected to get these from their grants. Continuing research becomes essential to keep their prestige in the academic profession. In the USA, salaries are paid only for nine months in a year, but a professor can take three months salary out of his research grants. No research therefore means no pay for three months and this is a high incentive for staying active in research. Of course there is a faith in the fairness of the research grant system.

Motivation for Educational Administration

Students care for good teaching and will go to only those institutions where teaching is good. Students' fees form a significant part of the budget of a university. Educational administrators will like to attract good students to their universities and will like to generate a high demand for seats in their universities. As such they are interested in good teaching and would like to get rid of indifferent teachers at the earliest opportunity.

Research grants to faculty members very often make a significant part of university funds. As such, university administrators like to appoint teachers who can get grants or who have a potential of getting grants.

No college or university president can afford to yield to pressures either in admissions or appointments. Every one of them is, in general, achievement-conscious.

There are also independent accreditation agencies which can derecognise degrees given by some college or university departments. This also acts as a sufficient deterrent against lowering standards.

Interest of Politicians

There is no political interference in day-to-day running of schools, colleges and universities. Schools all over the country have almost uniform facilities and more or less similar standards. Education is also free at pre-university level. Teachers have to satisfy parents and the principal and cannot survive through political patronage.

All politicians are educated and consider education as a means of human resources development, not only in words, but in true spirit. They do realise that in the modern world of high competition and high technology, high-quality education is essential for the survival of a nation. They are constantly emphasising excellence in education and are prepared to provide necessary funds for assuring the excellence. This is in contrast to the situation in our country, where many politicians regard colleges and universities as instruments of political advancement or as places where they can do favours to their friends.

The Examination System

In most cases the teacher is himself the examiner, but the system is quite open. The answer books of all the students are available for inspection and every student can discuss the marks given to him by his teacher. In fact a great deal of learning takes place in this discussion. Every teacher has an office and has to have regular office hours when he is available to the students.

Text-Books and Libraries

Every student buys all the text-books prescribed. He considers it a worthwhile expenditure, even if he has to take a loan for it. In internal examination system, teachers insist on the students reading the textbooks themselves and easier portions are not covered in the class. This system has two indirect benefits. The publishers do a thriving business and high quality books are produced. Also libraries are fully utilised. Teachers receive a large number of complimentary copies and can build up good personal libraries. The libraries are fully computerised. There is an excellent system of inter-library loan service, of great benefit to research workers.

Teachers, Professional Organisations

These are strong, but in addition to bargaining for salaries, they also insist on high standards of performance by their members. They lay down codes of conduct for their members. They enter into contracts with the universities, on behalf of the teachers, which lay down both the rights and duties of teachers in detail. These organisations have a high stake in the excellence of the educational system.

□

Where Have all the Values Gone ?

Nikhil Chakravartty

September 5 each year is observed as Teachers' Day. It is so observed because it is the birthday of Sarvepalli Radhakrishnan, the teacher who was honoured as the second President of the Rupublic of India. Those who have had the good fortune of being counted as Radhakrishnan pupils will always feel proud that he was the Professor-President of the land of ancient seers and modern avants and that humble teachers from different corners of the country are honoured every year on his birthday.

This year September 5 has come and gone leaving behind the disturbing memory of an ugly episode. For more than a month before that day, a massive strike of 230 thousand college and university teachers had gone on, demanding improvement in their terms of service as set by the Government. And actually the day before a settlement was arrived at in the form of an agreement signed by the Chairman of the University Grants Commission and the Secretary of the Union Education Department on the one hand, and the representatives of the All-India Federation of University and College Teachers Organisation, including its President and General Secretary.

These representatives of the teachers' federation found the settlement acceptable, though obviously as a compromise it could not possibly meet all the demands of the striking teachers.

What is noteworthy is that this settlement of the strike has met with the approval of the bulk of the college and university teachers all over the country. The majority viewpoint among the striking teachers was that what could not be realised immediately could be the subject of further negotiations to be taken up at a future date. Just at the present moment they felt that the settlement as envisaged in the federation agreement with the government warranted them to withdraw the strike, which had for more than a month disrupted the study of lakhs of college and university students all over the country.

But there was angry opposition to the agreement by another section of teachers who, as later developments have made it amply clear, form a minority in the university and college teacher community taking the country as a whole. Particularly vocal in their opposition to the agreement have been the teachers from the universities in Delhi. In fact, they have spearheaded the attack on the agreement. There is an understandable — but not necessarily rational — explanation for this angry outburst against the agreement from the aggressive section of teachers. They had already extracted concessions from the government through a protracted strike two years ago and so they had the misgiving that the present settlement might cut into their gains.

There was thus scope for differences within the federation, and the normal and proper channel for settling such differences is obviously the Executive Body of the Federation. Although the President and office-bearers of the Federation had been authorised before hand to negotiate and settle the dispute with the Government, one can of course demand that the terms of the settlement must be taken up for reappraisal within the Federation, particularly in its national executive.

In fact, two days after the signing of the agreement on September 4, the national executive of the Federation met and after heated arguments and angry discussions, endorsed the agreement by a substantial margin of 57 to 35 ; in fact the margin was actually 65 to 35, since eight of the office-bearers, the target of minority attack, refrained from voting.

What is intriguing is the extraordinary anomaly

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of the stand of the CPM leadership and the teachers belonging to that party. While the CPM leadership of the Delhi University teacher's union has denounced the agreement and has insisted on continuing the strike, the West Bengal University and College Teachers' Association, has welcomed the agreement. There is therefore ample scope for genuine differences of opinion among the teachers in their assessment of the agreement. Obviously, the legitimate course for sorting out such differences is to thrash these out through discussions within the teachers' organisation and not in a rowdy manner on the maidan.

But that was precisely what happened on the morrow of the agreement. At a gathering of members of the Federation near New Delhi's Jantar Mantar, the aggressive local teachers not only surrounded the President and the General Secretary of the Federation but physically assaulted them in public tearing off their clothes and smearing them with dirt, and it was the police which arrived to rescue them. A shocking sight of insensate intolerance which had the character of an underworld brawl.

It is intensely disconcerting that a community of teachers should indulge in such an attack and humiliate their fellow-teachers in such an intolerable situation. **Those who are supposed to have been entrusted with educating our youth and uplifting their character to become worthy citizens of this great country, were indulging in violence against their own colleagues. Isn't this a case of total abdication of moral responsibility ?**

Let us look at this shocking experience from another angle. Take the Federation President who was beaten up by his colleagues. He is known to be a distinguished teacher. How will he be able to exhort his pupils to practise discipline and preserve integrity? And the teachers who have participated in such goondaism, how can they go back and claim the respect and attention of their pupils ?

It is this exhibition of moral degeneration of a section of the only teachers who are supposed to be custodians of our civilizational heritage that has become a matter of grave concern for all right thinking citizens of this country. It provides the measure of our abdication of cherished values. It is time eminent academics instead of withdrawing into their shells came forward to enforce civilized norms of conduct on the part of their colleagues.

For me, the beating up of teachers by their colleagues on his birthday was like beating up the memory of Radhakrishnan himself. Not anger but anguish disturbs many of us at this misconduct of those who are supposed to carry the lamp of learning in this land. Must not our teachers pause and count the beat of their conscience within them ? Let them realise that they are supposed to teach their pupils that rowdyism is not revolution, and that we do not want to import into this country the vulgarity of the so-called "cultural revolution", which has been repudiated in the very land where it surfaced. □

[**Courtesy** : The Times of India]

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POPULATION EDUCATION

A Conceptual Framework

A.K. Ghosh*

The very term 'population explosion' conjures up visions of swarms of people like teeming ants covering every square inch of land and perhaps ocean. If a person in 1900 could have foreseen the present metropolitan complexes with their density, geographic scope, traffic snarls and pollution, the picture would have been described as an intolerable one which called for immediate, imaginative, courageous and radical preventive measures. The most knowledgeable predictions for the next 30 to 50 years are little more than intensifications of our present status. Overcoming poverty and its consequences calls upon society to make the extra investment that will compensate for the long years of lag and to telescope that compensation into as short a period of time as possible. The incredible explosion of population is menaced by an avalanche of numbers that obscure and even threaten to destroy our identities, absorb our energies and pose social and economic problems dwarfing those faced by all earlier generations of mankind. And according to one belief, "The population problem in the 21st century will bring about the annihilation of personal freedom and severely circumscribe man's movements."

It took over a million years from Man's beginning on this earth upto 1800 for the world population to reach the first billion. The second billion was added in 120 years (1800-1920). The third billion was reached in 1960. It was five billion in 1987 and is expected to be about seven billion in 2000. This rate of increase is abnormal indeed and affects not only food supplies, as indicated by Malthus, but impinges heavily on various sectors of human life viz. food, education, health, housing, environment, employment, as also other natural resources.

In the world today, India ranks second in population numbers and seventh in land area. That is, our country has to support about 15 per cent of the world's population on 2.4 per cent of the world's total land. And this population lives on less than 2 per cent of the world's income. Though India is only about two-fifths the size of the United States of America, she shelters more than two and a half times the population of the United States.

The role that education plays in the progress of individual and society and the impact it has on demographic behaviour, all countries are urged to further develop their formal and informal educational programmes; efforts should be made to eradicate illiteracy, promote education among the youth and end discrimination against women. Efforts have to be made on several fronts, both on short and long time basis, to bring down the rate of growth of population. Following prominent aspects may be mentioned in this behalf :

1. Adequate provision of family planning services with all their infrastructure ;
2. Education of all ethnic and economic groups about the effects of larger families ;
3. Extension of motivational programmes and population education among the school-going children, as also adults and out-of-school youths ; and
4. Economic and social policies directed towards population planning.

Educational institutions in all countries should be urged and encouraged to expand their curricula to include a study of population dynamics and policies, including where appropriate family life, responsible parenthood and the relation of population dynamics to socio-economic development. Governments are urged to co-operate in developing a world-wide system of international, regional and national institutions to meet the need for trained manpower. Assistance to the less developed countries should include, as appropriate, the improvement of educational infrastructure such as library facilities and computer services.

The phenomenon of population explosion has a variety of implications for the quality of life in the family, in the nation and in the world. The overall goal of a society directly confronted with the problem of population is to adopt ways and means of controlling unprecedented population growth to ensure a statisfactory standard of living for its people. These measures are necessary for personal and family welfare on the one hand and the welfare of the community on the other.

The following major instructional objectives are listed for imparting population education at the secon-

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Department of English, Falakata College, Jalpaiguri 735 211 (North Bengal).

dary stage. These specific objectives derived from the overall objectives of the existing society and school education are in terms of pupil growth in intellectual, affective and cognitive areas:

1. To acquire knowledge of essential terms and concepts related to population study, such as birth rate, death rate, migration, growth rate, life expectancy, population density etc.
2. To develop understanding about the dynamic character of population.
3. To acquire insightful awareness about present population trends, unprecedented rate of population growth and estimated further projections of population growth for different countries.
4. To develop a deep realisation of the implications of population trends, in a country in relation to health, food, transport, housing, pollution, education, employment, per capita income, natural resources and such other factors.
5. To develop insight into the relationship between implications of population growth and the quality of life in the family and the nation.
6. To develop skills in collecting and classifying population information, drawing maps and charts, exhibiting population material and undertaking similar curricular and co-curricular activities.
7. To develop interest in literature, current statistics and problems pertaining to population growth and its implications for various aspects of life.
8. To create understanding of the role of scientific and technological advancement in increasing human competence for planning and controlling population.
9. To develop an ability to arrive at sound decisions regarding population equilibrium by balancing population growth and resources.

The concept of population education has no doubt been thrown up in the education world quite recently. It is an educational responsibility to contemplate the economic, social and political issues. The programmes have, thus to be highlighted to meet its various social and economic objectives. Population education will generate necessary awareness amongst learners and prepare them for adopting a small family norm in their own lives for the benefit of the community and the country.

Curriculum

Population education being of recent origin has emerged as a new curriculum area at the school stage as a result of socio-economic needs. The curriculum content is to be drawn from disciplines like economics, geography and demography. Depending on the nature

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of the content, this curriculum area can be integrated with relevant subjects like social studies, geography, civics and economics, general science and biology. Some elements of population education can also be integrated with languages, mathematics, physiology, hygiene and other subjects. Thus the nature of population education is multi-disciplinary and its curriculum can be woven into a variety of subjects. While developing curriculum two other important factors are also to be kept in view. First, this is a subject through which not only some knowledge is to be imparted but also new attitudes and values are to be inculcated, and second, curriculum prescribed for the secondary schools being already crowded, a new curriculum should take minimum possible time for the classroom instructions. Thus the development of a new curriculum design is called for, where an introductory study should be provided through systematic classroom instruction sometime in the beginning of the secondary stage in a few periods. This may be normally done as part of social studies or any of the social sciences, for their study should be continued through the entire span of the secondary stage by means of a variety of curriculum activities for reinforcement of ideas and attitudes regarding population planning and its implications for the individual and the society. At the university stage, no curriculum may be prescribed but population education in its various facets should be imparted through a scheme properly drawn out extension lectures.

Course Materials : Written Visual

The need for supplementing or modifying the present curriculum to include population education in its various dimensions has already been indicated. Till the textbooks are modified and revised, suitable materials in the form of handbooks may be developed for the use of school teachers, who would use them in their day-today teaching. Teaching needs to be reinforced by the display of visual materials, which have to be developed. The use of bulletin boards, paper flash cards and such other materials is essential.

In every school a separate bulletin board for population study should be installed. Exhibitions and film shows should be arranged both in the classrooms and outside. It should be noted that these aids are particularly suited for co-curricular activities in the field of population education.

Research

Population education being a new area of education, calls for research not only in respect of curriculum but also in its teaching methodology. Departments of Education in Universities should have a research unit devoted to population education.

Evaluation

Evaluation of this new project should be made periodically to ascertain how far it has produced the desired impact. It is necessary to promote an inbuilt evaluation programme. To monitor the progress of the course of studies, the students may be given tests and called for interview from time to time.

Teacher Training

It is very important that teachers' training is oriented to take up this additional responsibility. Teacher training institutions should take special, appropriate and effective steps for this purpose.

Adult Education Programmes

Population education should, specially in developing countries, form an integral part of Adult Education Programme. It is now conceded that literacy programme should be used to impart instruction and disseminate information in various departmental activities, like agriculture, to become functional. It is also important that awareness of population problems and the methods to limit families with family planning measures are made an essential component of the Adult Education Programme. Population education should form a necessary part of the motivation campaign for the family planning programme too.

Non-Formal Education

Educational activities are now being developed through non-formal education. It is high time that population education is also included in this programme.

Role of Voluntary Agencies

It may be emphasised that population education is not only the responsibility of government agencies, but voluntary and non-government agencies have an important role in this behalf. In developing countries where the people are illiterate, more effective programmes can be carried out in this sphere through voluntary organisations in whom the people have greater faith. ◻

Urbanisation and Spatial Planning

Prof. Moonis Raza, Vice-Chancellor, University of Delhi, delivered the Convocation Address at the Sixth Annual Convocation of the School of Planning and Architecture (Deemed to be a University) on 4 November, 1987. In a definitive address, Prof. Raza described the evolution of a system of settlements as a regional rather than an urban or a rural phenomenon which could be defined as the reorganisation of the space through the redistribution of population among a hierarchical system of settlements along a continuum in response to vertical shifts within the workforce of the regional economy. Excerpts :

Convocation

Urbanisation is instrinsically linked and irrevocably intertwined with the developmental process, as an essential strand in the anthropogenetic component of the contemporary eco-systems. A scientific analysis of the organisation of space in current urban studies is seriously constrained by the underlying assumption that urbanisation is essentially an "urban" phenomenon, reflected primarily in the morphology and dynamics of urban settlements. Once this erroneous proposition is uncritically accepted, apparently on semantic grounds, the holistic spatio-temporal process is also necessarily assumed to be segmented; and the urbanists proceed to dissect with their sophisticated scalpels the head of a beheaded cadaver. Going beyond a city to a **system** of cities hardly brings about a qualitative change; for the feet are still not on the **terra firma** of the regional economy, and one tends to flutter ones ineffectual wings only in the rarified upper stratum. The causal relationships continue to elude the grasp, for the cause-effect complexes are embedded in the system of settlements **as a whole** and not only within its urban or rural segment. Evolution of a system of settlements as a process should, therefore, be identified as a regional rather an urban or a rural phenomenon and may be defined as the reorganisation of space through the redistribution of population among a hierarchical system of settlements of various sizes and having varying mixes of urban/rural attributes along a continuum **in response** to vertical shifts within the workforce of the regional economy. Urbanisation emerging at a specific historical stage in the evolution of the settlement system, should thus be viewed as a process generated within the system of settlements which integrate the tiny hamlets and the metropoles through interactive mechanisms, and exerting its impact on the entire system—from the **Kafilas** of the transhumant Gujjars to the **Chawls** of Bombay.

The relationship between the vertical shifts in the work force, on the one hand, and of its horizontal mobility, on the other, is of crucial significance in the development process. It is through this complex system of interactions that the changing organisation of space responds to the dynamics of the development of productive forces. The histogenesis of urban settlements in most parts of the orient clearly indicates that the earliest towns emerged within the womb of neolithic communities in response to the emergence of inter-sectoral diversification therein, a process accompanied in most cases by the generation of agricultural surpluses and its appropriation by the owners of land. With the growth of handicraft industries and of tertiary activities, the urban segment acquired a position of significance in the settlement hierarchy during the ancient and the medieval periods. There were, for example, 3,200 towns (**qasba**) and 120 cities (**Shahar**) in the India of 1586 as recorded in the classic **Ain-i-Akbari**. It was this historically determined process of urbanisation going hand in hand with the growth in non-primary activities which was disrupted during the colonial period by the suction mechanism of imperialist exploitation. It has been, for example, suggested that the proportion of urban to total population in India was higher at the end of the seventeenth century than at the end of the nineteenth. The self-reliant development process in India since our tryst with destiny in 1947 was directed towards the elimination of the colonial distortions in the structure of the economy and that of the settlements.

The size and the complexity of the Indian system of settlements, as we find it today, is a function of firstly, the large size of the country; secondly, the geographical diversity therein; thirdly, the great chronological depth of its historical tradition ; fourthly, the temporal continuity along with spatial discontinuities of the settlement process; and lastly, the stagnant decay of the system during the period of colonial rule. The country is as large as Europe minus the USSR. The extent of diversity in the natural environment is of an astonishingly high order—ranging from the senile topography of the Deccan to the youthful coutours of the Himalayas, from the system of highest peaks to the unvarying monotony of the extensive plains, from the intricate maze of channels in the delta to the almost complete absence of surface flow in the Thar, from the dense growth of tropical forests in the north-east to the vast tracts without a blade of grass. The tradition of settled living in this land mass of continental dimensions goes back at least to the fourth millennium BC; and, not very unfrequently, a modern neighbourhood rests on the strata of the ochre ware or the northern black pottery. The urban processes are rooted at least in the third millennium BC; and the oldest of the extant towns of the world—Varanasi—stands in line with a Corbusier creation. The tradition has shown a unique continuity but its cores, nucleii and its spatial spread across the vast expanses of the country have been changing in the kaleidoscope of time. The impact of colonial rule was qualitatively different from earlier processes in as much as it distorted and, in some aspects, inverted the development process, and, as a consequence, the dynamics of spatial organisation froze into immobility and the system of settlements wilted in an ethos of stagnant decay.

It is obvious that the spatial structure of the colonial economy, which corresponded with the requirements of a centrifugal suction mechanism of imperialist exploitation, was unsuited to and incapable of responding to the requirements of independent and self-reliant development. The non-economic constraints on the development process having been removed with the achievement of political independence in 1947, the country faced the challenge of moving away from 'structural underdevelopment' to all-round development by organizing the space economy in correspondence with the requirements of regional and national development.

The history of thwarted technological change in colonial India, however, continued to exert considerable influence and imposed serious constraints on the choice of technology in the post independence period which in turn determined the patterns of spatial organisation. While in the developed countries of the West, the endogenous development of higher technologies led to the liquidation of the lower ones, which had been rendered obsolete in the process, the exogenous imposition of higher technologies in isolated enclaves of dysfunctional development in India permitted the stagnant persistence of lower forms in a checker board of diverse levels of technologies which co-existed in the imperfectly integrated organism. The bullock cart and the jumbo-jet, the wooden plough and the tractor, the charkha and the textile mill—all these existed and continue to exist simultaneously in the amorphous and fragmented system of modified underdevelopment. The dualism in the technological front has its inevitable manifestation as rural-urban dichotomy and as a fracture in spatial organisation. The growth impulses generated through the market mechanism at the few urban nodes because of the concentration of high income yielding employment (including the governmental tertiary sector therein), have tended to get impounded mostly within the urban limits instead of getting diffused particularly in the depths of the rural hinterland. The Bombay-Ratnagiri or the Delhi-Mewat dualism, reflecting technological advance in the urban agglomeration coupled with agricultural backwardness in the neighbourhood, has been duplicated on a large scale on the economic map of India.

The process of industrialisation in the country continues to be weak, dis-articulated and regionally concentrated around a few urban conurbations. Its weakness is reflected in the small magnitude of its share in the workforce, which continues to be alarmingly low. Its disarticulation is revealed in the lack of correspondence between spatially linked clusters of industrial activity, on the one hand, and technologically linked clusters on the other. The extent of regional concentration is indicated by the fact that industrial licenses continue to be concentrated only in a few favoured locations and only four of these conurbations (those of Calcutta, Bombay, Delhi and Madras) accounted for a large share of such licenses.

The urbanisation process in India has been essentially constrained since independence, on the one hand, by the highly disparate agricultural base with islands of the green revolution surrounded by an ocean of rural backwardness and, on the other, by the anaemic as well as disarticulated process of industrialisation in the country. The urban centres countinue to be, by and large, stultified and dysfunctional—mainly concerned with services rather than with production. With a substantial primary sector, with a weak secondary sector and a bloated tertiary sector, the great majority of these towns are floundering in the quicksands of the "bazar economy", continuing to devour without digesting surplus labour from the hinterland by their unique capacity to involute—their growth continuing, as in the case of some of their counterparts in Latin America, to be unproductive and economically irrational". The economic base of Indian urbanisation continues to be its Achilles heel.

The thwarted and stunted character of Indian urbanisation is reflected, firstly, in the exceptionally low share of the urban population to the total population, approximating to the average for the continent of Africa minus the Republic of South Africa; secondly, in the slow rate of growth of the urban population relative to the total population; thirdly, in its "top heavy" structure which is becoming increasingly top heavy; and fourthly, in the sharp gradients of their areas of influence giving them an enclave character, which even in the case of project centres of heavy industry reflect the intensification of the urban-rural discontinuity so that one sometimes moves from the world of the most advanced ferrous metallurgy to the realm of shifting cultivation, traversing four millennia in fifteen miles.

The inadequacies of the industrialisation—urbanisation process in India have been referred to at some length in order to bring out the inescapable conclusion that the third world is suffering not from too much of urbanisation but from too little of it, not from too much of industrialisation but from too little of it. The lesson that the developing countries have to learn from the historical experience of the developed ones does not lie in the rejection of urbanisation but in its regulation, not through the market mechanism but through social controls, not through maximisation of private profit but through the optimisation of social benefits. The technical answers to questions relating to low cost housing, pollution control, bublic transport, filtered water, recycling of sewerage and waste, provision of open and green spaces, public health, hygiene and sanitation are all quite well known. The hiatus does not lie in technology but in social organisation, which has shown a unique incapacity to implement these technically feasible solutions. This is crux of the matter. Some Don Quixotes of the developed and some Sancho Panzas of the developing world are striking their lances at wind mills!

The national settlement policy must take note of the human condition in the contemporary world wherein the integration of the world has proceeded along with its fragmentation. The dialectical relationship of these two aspects of the same process must be fully understood. Mankind has to come to terms with the globalization of society and the gulf between parochial perception of narrow minds and the concerns of a one-world reality must be bridged.

The spread of modern industrialization had already, towards the beginning of the nineteenth century, replaced the aggregate of closed or semi-closed systems of the pre-capitalist formations by a loosely integrated world market. The peasants of Asia and Africa, living for millennia in the isolated small world of petty production, were used to natural calamities like floods and droughts, cyclones and earthquakes but were for the first time exposed to blind forces of the market which they did not know. The suction mechanism of international exploitation extended its tentacles to the remotest hamlet and united the developed and the underdeveloped in a world economy. Advances in transport and communication during recent years have further strengthened such trends, have brought the entire world to our doors and have made everybody everybody's neighbour. Walls have crumbled; and ideas ride the winds. A poem, created on the Left Bank today, provides spiritual sustenance to young scientists in the Silicon Valley or Novosibirisk the next day. The findings of a research project in the Kolar mines reach Trieste in minutes and become inputs in the work of a Nobel laureate, whose words are heard with bated breath in Tokyo, Princeton and Oxford over the weekend. The agro-biological researches in Mexico provide the basis for the green revolution across the oceans in India and Pakistan. The heartbeat of the young in Europe become faster on the rythm of African drums, or the swara of the Indian sitar. The world has become one indeed!

The integration of the globe is unfortunately accompanied by a fragmentation of the human condition, which needs to be distinguished from differentiation. While differentiation articulates and reflects diversity, fragmentation generates and sharpens disparity. While differentiation of an integrated world is a function of development, fragmentation of the world has been a function of the development of a few have-nations proceeding along and causatively linked with the underdevelopment of the mass of mankind. This is the most agonizing tragedy of our time; for development like freedom is indivisible. The industrial revolution marks the watershed in history. The surpluses generated by the sweat and toil of people all over the world, since then, were swallowed up by the ruling classes of a few nations through colonial suction mechanisms to build industrial empires and transform the rest of the world into their raw material appendage and a market for their goods.

The fragmentation of the world between the industrialized North and the agricultural South has created a serious cleavage in the rural-urban continuum. North is becoming increasingly non-rural with most of its population living in urban settlements; South is being transformed into a large aggregate of villages inhabited by most of the rural population of the world. The percentage share of the population of the more developed countries who inhabit their urban settlements goes on increasing at an alarming rate and getting concentrated in fewer and fewer megalopolises. The North is threatening to become one large conurbation—the cruel and sick city with the anomie and loneliness of an alienated humanity, the windowless silos full to the brim with discarded hopes and nameless fears, the concrete jungles inhabited not by neighbours—neither love nor hate, neither friends nor foes, but by faceless non-persons; data units of an animated demagraphy. Was it for this that Prometheus brought fire from the heavens and Visnu churned the oceans !

There are three altars in this big city—one each for the revered gods of an industrial capitalism run amuck—economies of scale, of agglomeration and of urbanisation. The industrial revolution ushered in the era of the factory city—smoke belching chimneys rising over working class sulms, the refuge for expropriated peasantry in an alien world. Viewed in the context of history, the emergence of the industrial city was a positive step in the right direction. It converted the vertical shift in the work force from the primary to the secondary sector into horizontal mobility from the rural to the urban settlements. The city was thus an instrument of history and the three-fold economies provided the raison d etre for this historical process.

The scientific-technological revolution of our time has, however, transformed the situation qualitatively. The micro-chip has taken quite a bit of the wind out of the sail of the economies of scale. A highly skilled white aproned work force of two figures working in a villa within a park may produce higher value added than a blue collared work force of four figures breathing polluted air in the jungle of chimneys of a four acre factory. It is not being suggested that the small is always and necessarily beautiful. The argument is based on the realization that the scientific-technological revolution has made it possible for economies to be available along the whole spectrum of scales. It is, therefore, not surprising that the North is increasingly shifting the resource-based, large scale polluting industries to the South and is concentrating instead on the innovative highly skilled, R and D based systems wherein the laboratory imperceptibly merges into the production line. The "clean" scientific-technological revolution, unfolding in the North is pushing the polluting industrial revolution into the South. By the time the North is in the twenty first century, the South would be struggling into the nineteenth.

The autonomy of the shopping plaza from the residential neighbourhood and of the latter from the industrial area has already been made possible by qualitative improvements in short-range transport. The home computer has brought about an information revolution; and interconnected terminals of large systems make it possible for same economies to become available in small and medium sized settlements as well. The perspective for the twenty first century is, therefore, not necessarily of cannibal megalopolises swallowing up smaller specimens of their own species but of a balanced and humane system of settlements wherein the large, the medium and the small flourish in symbiosis. There is too much of urbanisation in the North and too little of it in the South. The polluted city of the North and the filthy village of the South are two sides of the same coin. The former is sick with affluence, the latter is diseased with poverty. The former has the paunch of the overfed, the latter has the bloated belly of the scurvy striken; the former needs slimming, the latter needs nutrition. Glorification of the former is inhuman and romanticization of the latter is cruel. There is no escape from one to the other. The blacks in the blind alleys of Harlem as well as the hippies in the suburbs of Kathmandu have learnt this bitter lesson the hard way.

The contradiction between the integration of the globe and its fragmentation has to be resolved expeditiously. The fracture in the human condition brought about by the hammer strokes of industrial capitalism must be healed by the knowledge provided by the scientific-technological revolution of our times. This is necessary not only in the interest of those who have been and continue to be at the receiving end but of mankind as a whole. This calls for a new weltanschauung—a new world view. Deterministic as well as consumeristic cobwebs must be cleared from our thinking apparatus. Those who consider poverty to be nature's gift which the teaming millions of the developing world must inescapably endure are as much in the wrong as those who, in their misplaced endeavours to conquer nature, are destroying the earth as the home of man. It is as naive as well as dangerous to seek solace in the spurious spirituality of poverty as to seek meaning and purpose at the consumerist counters of affluence. The sophistication of the city must be combined with the earthiness of the village with a view to restore the rural urban continuum in the living style of mankind.

The work of the graduates who go out into the wide world today has to be imbued by such a humane vision. The cities that they plan, the houses that they build, the factories that they erect, the transport network that they establish, the landscapes that they create and, above all, the dreams that they dream—all these should contribute to the deepening of the humanisation of the **homo sapien** through the mutual interpenetration of form and function, means and ends, work and knowledge so that the good, the beautiful and the true become one in the spirit of man. ☐

Madras Varsity to Offer New Courses

The Academic Council of the Madras University is reported to have recommended to the Senate the institution of six new diploma courses in law to be offered through the Institute of Correspondence Education in the university. It also approved the regulations and syllabi for these courses. The courses relate to labour law, taxation law, insurance law, mercantile law, Indian constitutional law, and criminal law including evidence. The revised regulations and syllabi relating to M.A. Criminology were also approved to take effect from the academic year 1988-89.

The Academic Council also recommended the institution of the following courses : Degree of Bachelor of Fine Arts in Painting and also in Sculpture of three years' duration open for higher secondary certificate holders; three part-time degree courses of one-year duration each—B.Sc. Visual Communication Design for holders of diploma in Commercial Art, Bachelor of Fine Arts in Painting for holders of diploma in painting, and a Bachelor of Fine Arts in Sculpture for holders of diploma in sculpture. The regulations and syllabi for these were also approved to take effect from the year 1987-88.

Ford Foundation Grant for Anna Varsity

The Ford Foundation has approved a grant of $ 2,30,000 (Rs. 30 lakhs) to the Centre for Water Resources, Anna University, Madras, for taking up action research study in the rehabilitation and management of small reservoir based irrigation (tank irrigation) systems in Tamil Nadu over a period of three years. This grant is stated be in continuation of an earlier study made by the centre on tank modernisation programme (a Government programme financially supported by European Economic Community), its problems and issues as well as monitoring and evaluation, with financial support from the Ford Foundation.

In the programme earlier undertaken by Anna University, water users were involved in decision-making as an experimental measure, but only in a limited way. The proposed project envisages more participative approach in which the project group would help organise water users, prepare them for negotiation with PWD and other officials at the planning and construction stages and provide continuing support upto the first post-rehabilitation irrigation season. Four of the tanks scheduled for rehabilitation under the earlier programme would be selected and the results obtained from the field study would be compared with those being achieved under the earlier programme.

Digital Language

The researchers at the Universal Digital Communication Research Institute (UDCRI), New Delhi, have developed a new digital language with alphabets from zero to nine. According to UDCRI Director, Mr. Abasama, the new system will cut across the language barrier as all languages in the world can be translated into the basic digital language that can be handled by a computer. He said that development of the digital language is the first step "toward realisation of the dream of on-line automatic translation computers which would make it possible for people speaking different languages to converse without difficulty."

The Institute has already produced digital dictionaries for English, Hindi and Sanskrit. Similar dictionaries for other Indian languages are also to be developed.

Health Science Institute Planned for Ludhiana

The Christian Medical College (CMC), Ludhiana, has drawn up a proposal to establish an Institute of Health Science in collaboration with the Punjab Agricultural University. Dr. Zakaria, Principal of the CMC, alongwith Dr. William A. Robinson, Professor of Medicine and Head of the Department of Oncology, University of Colorado Medical School, Denver, USA, recently met Dr. Sukhdev Singh, Vice-Chancellor of the PAU to explore the possibility of collaboration from the various departments of the PAU allied to health. The Vice-Chancellor is reported to have agreed to discuss the proposal with the concerned faculty.

Admission to MD Courses

The Sree Chitra Tirunal Institute for Medical Sciences & Technology, has announced that the entrance examination for admission to the Post-doctoral programmes leading to DM Cardiology, Neurology, M.Ch Cardiovascular thoracic surgery, Neurosurgery, and post-doctoral certificate course in Anaesthesiology and Radiology will be held at the Institute on 21st and 22nd December (Monday and Tuesday) instead of the dates advertised earlier. One seat each will be reserved for SC/ST candidates in the DM Neurology and M. Ch Neurosurgery course during the academic session 1988.

News from Agril. Varsities

National Seminar on Agro-Forestry

The Research Directorate of the Narendra Deva University of Agriculture and Technology, in collaboration with the Agricultural Society of India, recently organised a 3-day National Seminar on "Agro-forestry"—its present status and scope for future development in farming systems". Inaugurating the seminar Dr. Kirti Singh, Vice-Chancellor of the University, suggested that fruit trees should be included as an important component in the afforestation programme to cope with the problem of malnutrition widely prevalent in the rural areas. In his presidential address, Dr. D. K. Das Gupta, Vice-Chancellor, Bidhan Chandra Krishi Vishwavidyalaya, Kalyani, gave a brief history of the Agricultural Society of India and emphasised the need for concerted efforts in making agro-forestry a peoples' programme.

Delivering the valedictory address, Mr. R. Venkatnarayanan, Member Secretary, Waste Lands Development Board, emphasized that three main issues should be kept in view while implementing the agro-forestry project. These are upgrading the land, more productivity on the farms, and security in adversity to the poor farmers.

Some of the important recommendations made at the seminar were asunder :

(i) Need for establishing seed centres for raising genuine plant material. Tissue culture techniques should be used for large scale multiplication of genuine, rare and disease free plants ; and

(ii) The Agricultural Universities should be assigned the task of developing manpower, and at the same time, a mechanism should be worked out for the employment of such trained personnel in the agro-forestry projects.

All the plantation programmes should be linked to some kind of industry for the utilization of the end product. Inclusion of fruit as a component in the agro-forestry for quick returns was also recommended.

HAU to Restructure R & D Programmes

The Haryana Agricultural University (HAU) is reported to have decided to restructure its research and extension programmes "with a view to providing a boost to the on-going need-based programmes and to make farm research more relevant to the ecology of the region." According to Mr. M. S. Rathee, Vice-Chancellor, "the procedure for the transfer of technology from the research farms of the university to the farmers fields is being reviewed to further bridge the gap. To do so, the HAU would seek assistance of the Indian Council of Agricultural Research (ICAR)."

The State Chief Minister, Mr. Devi Lal, had, during his recent visit to Hissar, asked the Vice-Chancellor and HAU scientists to develop agricultural technology suited to the day-to-day needs of the small and marginal formers, landless labourers, rural artisans, women and youth, thereby correlating HAU expertise with the common man and his problems. He has asked the HAU engineers to fabricate and develop prototypes of farm machines for practical use by the small and marginal farmers.

Mr. Rathee said that during the recent sample review of the research and extension programmes critical gaps between actual and potential farm yields at the current level of available technology were noticed. These gaps must be filled by removing the constraints. The state government is keen to extend full cooperation is this regard, he said.

US Envoy Visits PAU

US Ambassador in India, Mr. John Gunther Dean, recently visited the Punjab Agricultural University to see the progress of PL-480 projects functioning at the PAU. He discussed with the Vice-Chancellor, Dr. Sukhdev Singh and Deans and Directors of the University, the details of the projects (i) Germplasm Collection, Maintenance and Evaluation of Wheat; (ii) Strengthening of research on breeding for resistance to Karnal Bunt, and (iii) All-India Coordinated Research Project on Intracellular Blood Protista with particular reference to Immune Prophylaxis and Control.

Dr. Sukhdev Singh apprised the Ambassador of the Karnal Bunt disease of wheat which has been reported frequently. Low infection of 5 per cent may render the produce unsuitable for human consumption. The Vice-Chancellor informed that a new technique for screening against this disease has been devoloped at PAU which involves culturing of pathogen in the laboratory and inoculation in the field for Karnal Bunt infection and standardization of required humidity and temperature by using mist-spray.

Regarding the other project on Germplasm Collection of wheat, Dr. Sukhdev Singh said that under this project 9562 germplasm collections of bread wheat, durum wheat, triticale and wild species and genera have been collected. These materials are being evaluated and screened for various selected characters such as spring/winter habit resistance to yellow and brown rusts, Karnal bunt, loose smut and powdery mildew and are also being evaluated for protein and lysine content.

The Ambassador also visited the Department of Animal Science and saw the elite buffalo herd maintained under the project 'All-India Coordinated Research Project'. He also visited the Crop Museum in the Department of Plant Breeding, and Museum of Rural Life of Punjab.

Dr. Sukhdev Singh presented a set of PAU publications to the Ambassador.

New Wheat Variety

Punjab Agricultural University wheat breeders are reported to have advised farmers to grow the PBW 34, PBW 120, PBW 154 and WL 1562, varieties, which are highly resistant to Karnal bunt and rust.

The durum wheat variety 34 has bold, hard and lustrous grains and its average yield is 22 quintals an acre. The bread wheat variety PBW 120 has amber and hard grains and gives an average yield of 22 quintals an acre. WL 1562 is a double dwarf variety with an average height of 82 cm. It has an excellent chapati making quality with an average yield of 20 quintals an acre.

A new wheat variety PWB 154 has been released this year. It has wide adaptability and possesses amber, very bold, hard, uniform and lustrous grains. It gives 21 quintals of yield an acre.

Dr. Khem Singh Gill, Director, Extension Education, claims that the cultivation of these varieties in bunt prone areas will go a long way towards minimising losses due to Karnal bunt. His stress is on timely sowing of wheat varieties to minimise the incidence of Karnal bunt. These varieties can be sown from October 25 to middle of November in Karnal bunt prone areas.

For rainfed areas of Gurdaspur, Hoshiarpur and Ropar, farmers are advised to grow the PBW 65 wheat variety which is resistant to loose smut, Karnal bunt, brown rust and gives high yield.

For late sowing, they are advised to specially grow WL-1562, Sonalika Multiline-1 and TL-1210. They are further advised to treat the seed before sowing with Thiram at the rate of 3 gram per kg. of seed to avoid the entry of Karnal bunt pathogeninto unaffected areas.

WL-2265 is another single dwarf wheat variety which can be sown in the State's rainfed areas. The average yield of this variety is 13-14 quintals an acre.

Dr. Gill advises farmers in rainfed areas to apply aldrin at the rate of 4 ml-30 EC per kg. seed. To control loose smut the seed should be treated with Vitavex after aldrin treatment. He also pleads for a balanced use of fertilisers in rainfed areas to achieve better yield.

News from Abroad

Innovative Methods in Technological Education

Unesco and the European Society for Engineering Education (SEFI) organized an international symposium on innovative methods in technological education at the University of Paris-Sud XI in Orsay (France) from 21 to 24 September. The aim of the symposium was to bring together world experts in the latest methods of the teaching of technology and those concerned with the problems of designing and running training programmes in both industrialized and developing countries. The participants, about 200, included 50 specialists from developing countries who were able to take part with Unesco's help.

Discussions during the symposium covered a number of topics, such as teaching media choice, computer-aided learning, practical work and courseware development, experience and problems of innovative teaching methods in developing countries, inter-institutional and international collaboration, and innovative education for industry and the technical professions.

The participants took the opportunity to exchange views and information on a variety of innovative methods ranging from programmed texts to distance learning via satellite, and on studies and research on better adaptability of these methods. Particular attention was given to the specific problems of developing countries, particularly with regard to training, finance and the cost-effectiveness of alternate delivery systems.

The symposium ended with a plea to Unesco to continue and increase its activities in this field and, in co-operation with other international bodies, to provide greater assistance to Third World countries in the introduction of innovative teaching methods in their technological and technical education programmes.

Savings Plan for Tuitions

The US Senators, Edward M. Kennedy and Claiborne Pell recently introduced a proposal in the Senate that would permit families to finance the cost of college through tax-free U.S. savings bonds. Interest would be tax free on bonds used to pay for college, creating a tax incentive to save for college

According to Kennedy and Pell the use of savings bonds has several advantages over other state and federal proposals to help parents save for college. First, savings bonds already are widely available and easily accessible to families. No new agencies need be created to run the program. The program would be risk-free because savings bonds are backed by the U.S. government.

The bonds could be used for any other expense if a child chose not to attend college—all that would be lost would be the tax advantage. The bonds also could be used at any higher education institution—students would not be restricted to a single state or college, as with some plans.

Sports News

Varsities Team for Nehru Hockey Tournament

M.P. Singh of Panjab University has been named as the Captain of the Indian Universites Hockey (M) Team participating in the Jawaharlal Nehru Hockey Tournament being held in New Delhi from Nov. 14 to Dec. 8, 1987. The team was selected at the three day trials organised at Delhi University from Nov. 5 to 7, 1987. Other members of the team are: A. Thomas (Bombay); Vimal Seth (Delhi); Arvinder Singh (PAU); Joga Singh (Delhi); Gurbir Singh (Panjab); Pradeep Singh (Guru Nanak Dev); Sheeraz Alam Azmi (Aligarh Muslim); Karanveer Singh (Delhi); Kamal Mohd. (Bhopal); Parvinder Singh (Lucknow); S. Asim Zafar (Aligarh Muslim); Raj Kumar (Bangalore); Surjeet Singh (Panjab); Sarabjeet Singh (Meerut); and G.P. Bhuller (Delhi).

The players received training under the supervision of Mr. Jawoid Ali, Hockey Coach from Aligarh Muslim University. Mr. Pragat Singh, Director of Physical Education, Khalsa College, Delhi University has been nominated as the manager of the Team.

ASSOCIATION OF INDIAN UNIVERSITIES

AIU HOUSE, 16 KOTLA MARG, NEW DELHI-110002

Applications from Indian citizens are invited for the following post in the prescribed form available on payment of Rs. 2/- from the Office of the Association:

Research Officer

Pay Scale : Rs. 2200-4000 (Revised)

Qualifications

Essential : Good Master's Degree in Economics, Education or Social Sciences.

Desirable : Doctorate in Education or in Economics, with 5 years' experience in Research preferably in the area of Economics of Education.

Job Description

The incumbent will be responsible for handling research projects and organising seminars, conferences and workshops relating to university education.

Persons with experience of working in university level institutions will be preferred and can be considered on deputation terms.

The post carries Dearness and other allowances generally at the Central Government rates. Total emoluments at the initial of the Scale amount to Rs. 3256/-, including HRA and Special Allowance. Higher start in the prescribed pay scale may be given in deserving cases. Relaxation in any of the requirements may be made in exceptional cases. The post is for one year in the first instance but is likely to continue on a regular basis. The Association reserves the right not to fill up the vacancy advertised, if the circumstances so warrant. SC/ST/Ex-servicemen will be given preference. Canvassing in any form by or on behalf of a candidate will be a disqualification. Outstation candidates called for interview will be paid single second class rail fare to and fro by the shortest route.

Applications complete in all respects should reach the Office by **30 November 1987**. Persons already in service should apply through **proper channel**. Applications received after the last date or without complete information will not be entertained.

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is open from 9-00 a.m. to 5-30 p.m. Monday through Friday. Access can also be had through Inter library loan for which requisition must be made through your Librarian.

ADDITIONS TO AIU LIBRARY

Asratyan, E.A. and Simonov, P.V., ed. *Learning brain.* Moscow, MIR Publishers, 1986. 222p.

Association of Indian Universities, Delhi. *Handbook of medical education. 1987.* Delhi, Author, 1987. xvii, 322p.

Barnes, Gregory A. *American University : A world guide.* New Delhi, Allied [c 1984] xiii, 196p.

Bengalee, Mehroo D. *Facing modern educational challenges: A teacher's manual.* Bombay, Sheth Publishers, 1983. x, 100p.

Cahill, Bruce, ed. *Unesco in Asia and the Pacific : 40 years on.* Bangkok, Unesco, 1986. discontd.

Goheen, Robert F. *Human nature of a university.* Princeton, University Press, 1969. 116p.

Gupta, Shyam Ratna and Schottli, Urs W., ed. *Good citizenship : Rights, duties, responsibilities.* New Delhi, Roli Books [c 1987] xvi, 136p.

Hauck, Paul. *How to do what you want to do : Overcoming common problems.* New Delhi, Sudha Publications [c 1983] 96p.

India. Ministry of Education and Culture. *Directory of institutions for higher education : 1979-80.* Delhi, Author, 1982. vii, 454p.

India. Ministry of Health and Family Welfare. *Report of the Medical Education Review Committee.* Part 1. New Delhi, Author, 1983. vii, 92p.

India. Ministry of Personnel, Public Grievances and Pensions. *Directory of training institutions.* New Delhi, Author, 1981. ix, 493p.

India. University Grants Commission. *Report of the Committee for framing regulations under UGC act for charging of fees by colleges.* Delhi, Author, 1986. v, 88p.

__________. *Revised guidelines on the scheme of autonomous colleges.* New Delhi, Author, 1986. vi, 90p.

International Conference on Education 40th Session, Geneva, 1986. *Final report.* Paris, Unesco, International Bureau of Education, 1987. 147p.

International Workshop on National issues on Computers in education, Bombay, 1987. *Report.* Bombay, IFIP, 1987. 33p.

Khashu, M.K. *Education, technology and development.* Srinagar, Regional Engineering College, 1982. vi, 111p.

Mathur, L.N. *Dramatic moments in Ranji Trophy.* Udaipur, Author, 1987. 184p.

M.S. University of Baroda. Centre of Advanced Study in Education. *Study of vocationalization of education at the higher secondary stage : A research project.* Baroda, Author, 1985. 257p.

Murphree, M.W. and Ngara, E.A., ed. *Inter-university cooperation in Eastern and Southern Africa.* Harare, Association of Eastern and Southern Africa University, 1984. vi, 205p.

National Conference on Alternative Development Strategies for India, Delhi, 1979. *Development goals and strategies : The next decade—Report.* Delhi, Society for International Development, 1979. iii, 84p.

Padmanabhan, C.B. *Inter-state variations in financing of education : A regional dimension.* New Delhi, N.I.E.P.A., 1986. 28p.

Patel, Babubhai J. *Sardar Vallabhbhai Patel : His life and times.* Ahmedabad, Sardar Vallabhbhai Patel Memorial Society [c 1986] 51p.

Ramakrishnan, Ganapati. *Community college for India.* Madras, Institute for Development Education, 1980. xvi, 80p.

Seminar on Involvement of Women in Planning and Management of Education, Bombay, 1987. *Report*. Bombay, S.N.D.T. Women's University, 1987. discontd.

Sobti, M.L. *Financial code for university systems*. New Delhi, Vikas [c 1987] xxiv, 424p.

Somasundaram Pillai, J.M. *University's environs; Cultural and historical : A silver jubilee souvenir of the Annamalai University*, 1963. 204p.

Srivastava, R.S. *Aged and the society*. New Delhi, Citizenship Development Society, 1983. x, 89p.

Taneja, S.R., ed. *Science to instruments : A kaleidoscopic view*. Chandigarh, C.S.I.O. 1983. 151p.

Tilak, Jandhyala B.G. *Educational finances in India*. New Delhi, NIEPA, 1987. vi, 73p.

Wallace, James. *Brahman-EMC : Science and the mystical, secrets of the universe*. New Delhi, Allied, 1985. xiv, 251p.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Language & Literature

English

1. Chellammal, E. *Southernness in the novels of Carson McCullers*. Anna.

2. Elamaran, M. *A comparative study of Robert Burns and Bharathidasan*. Madurai.

3. Mahanta, Dhirendra Kumar. *Dualities in Shakespeare's problem commedies*. Gauhati. Dr. Hirendra Nath Gohain.

Russian

1. Narendran, V. *Mahabharata and War and Peace : Creations of necessity*. Karnatak. Dr. D.B. Dhawan.

Sanskrit

1. Gurunath, Hampiholi Mahesh. *A comparative study of Bhamati vivarana and varthika schools*. Karnatak. Dr. B.R. Modak.

2. Pande, Rashmi. *Bharatiya darshan mein parmanu*. Panjab.

Hindi

1. Bhupal Singh. *Yug chetna ke sandarbh mein Vinaypatrika aur Gitavali ka mulyankan*. JNU. Prof. (Mrs.) Savitri Chandra.

2. Jain, Komal. *Nai kavita ke sandarbh mein Sarveshwar Dayal Saxena : Ek sahityik anusheelan*. Vikram. Dr. Rammurti Tripathi.

3. Jaiswal, Tej Narayan. *Dinker ka sahitya mein samajik evam rajnitik tatva*. Osmania.

4. Joshi, Pushpa Yeshwantrao. *Renu Pendso ke anchalik upanyson ka tulnatmak adhyayan*. Osmania.

5. Laxminarsaiah, R. *Chhayavad aur Bhava kavita mein prakriti chitran*. Osmania.

6. Manju. *Mahila lekhikaon ke sathottari kahani sahitya mein parivarik vighatan*. Panjab.

7. Pande, Sucheta G. *Sant kavya parampara ke paripekshya mein Namdev ke Hindi sahitya ka anusheelan*. Nagpur. Dr. Ghanshyam Jha.

8. Rudravajhala Suman Lata. *Ashthachap tatha Talpaka ke kaviyon ka tulnatmak adhyayan*. Osmania.

9. Sharma, Braj Mohan. *Mahakavi Nanddas : Antar kathayen evam adhyayan*. Gulbarga. Dr. S.M. Kappikeri.

10. Tripathi, Om Prakash. *Hindi kee pragtisheel lekhan kee parampara ke sandarbh mein Ganga Prasad Mishra ka katha-sahitya ka anusheelan*. Panjab.

Urdu

1. Atharunisa Begum. *Ahed-E-Asafjahi mein Urdu natia shairi*. Gulbarga. Dr. Razzak Farooky.

2. Khan, Naushabatual Fatema. *Kanhaiyalal Kapur : Hayat aur karname*. Nagpur. Dr. M.A. Rahamutalla.

Assamese

1. Mahanta, Prafulla Chandra. *The emergence and growth of Assamese middle class and its role in socio-economic and cultureal transformation in Assam during British Rule, 1826-1947*. Gauhati. Dr. Hirendra Nath Gohain.

Oriya

1. Jena, Subas Chandra. *Fakir Mohananka rachanare hasyarasha*. Utkal.

2. Mishra, Ajaya Kumar. *Creative/poetic mind of poet Radhamohan Gadnayak*. Utkal.

3. Mishra, Sanjukta. *National consciousness in the literature of the Mayadhar Mansingh*. Utkal.

4. Samanta,/Ratnamanjari. *Thoughts and consciousness in Oriya one act plays*. Utkal.

Marathi

1. Muley, Vandana. *Social and political thoughts as reflected in the Dramas of J.P. Khadilkar*. Durgawati. Dr. (Smt.) Kamal Notke.

2. Warashashiwar, P.P. *N.C. Phadke yanchya kadab yati istri vyaktirekha : Ek abhyas*. Nagpur. Dr. M.R. Joshi.

Tamil

1. Malathy, G. *T.M.C. Raghunathan's padaipou Ilakkiyangal.* Madurai.

2. Santhanam, M. *Peraciriyar uraithiran.* Madurai.

3. Sundaram, U. Meenakshi. *An analytical study of childrens folk songs of Tirunelveli District.* Madurai.

Malayalam

1. Padmanabha Kurup, A. *The poetry of Sree Narayana Guru : A literary and philosophical study.* Calicut. Dr. C.P. Achuthanunni.

Kannada

1. Vishwanathayya, Yakkundimath Basavaraj. *Basavapoorvayugad Veerashaiva sahitya.* Karnatak. Dr. S.M.V. Swamy.

Telugu

1. Lakshmi Narayana, V. *Gopichand kathalu-Vyasalu.* Osmania.

2. Raja Rao, M. *A comparative study of Gurazada Appa Rao and George Bernard Shaw.* Osmania.

3. Sundara Rama Krishna, A. *The poetical works of Venkataparvateeswara Kavulu with special reference to Ramayana.* Osmania.

4. Venkata Sri Ranga Nayaki, Koganti. *Sambhudasu-Tatvadarsa namu.* Andhra.

Geography

1. Achuta Rao, Tippur Narayan. *Regional development of Karnataka : Achievements, problems and strategies, a spatial analysis.* Utkal.

2. Paranjape, Jyotsna. *A regional analysis of industrial location in Maharashtra and Gujarat, 1961-1981.* JNU. Dr. Kusum Chopra.

3. Prahalad Kumar. *Geomorphological evaluation of environmental degradation and management in Dhauliganga Basin, Central Himalayas.* JNU. Dr. S. Padmaja.

4. Shukla, Kirti. *Raipur Bhilai Pradesh ke samajik-arthik bhoodrishya mein parivartan.* Ravishankar. Dr. H.S. Gupta.

History

1. Pande, Madhukar N. *Khan deshateel swatantraya lahyanche itihas 1885 to 1947.* Nagpur. Dr. S.G. Kolarkar.

2. Sinha, Yogesh Kumar. *Inter-State and international relations in Ancient India during the seventh century A.D.* Bihar. Dr. Ravi Varma.

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- Scholarships and Fellowships;
- Academic year—last date for admissions and the approximate dates of examinations
- Courses of Studies;
- Minimum requirements for admission to each course, duration and the subjects of study for each course;
- Names of Professors and Readers/Assistant Professors together with their academic titles department-wise;
- Names of Colleges together with names of Principals and Heads of Postgraduate Departments in Colleges;
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INDIAN COUNCIL OF MEDICAL RESEARCH

Applications are invited for filling up of the following posts at the Council's Institutes/Centres :

1. At National Institute of Nutrition, Hyderabad

(i) Assistant Director—2 posts

Scale of pay of Rs. 3700-125-4700-150-5000.

Qualifications & Experience

(a) For Post No. 1. (NUTRITION SURVEILLANCE)

Essential : A doctorate or equivalent post-graduate qualification in statistics with original work as evidenced by published papers. Evidence of leadership with 10 years of research/teaching experience in Biostatistics.

Desirable : Experience in analysing data related to Nutrition. Monitoring and Surveillance and other community based nutrition studies.

Job Requirements : The incumbent is expected to monitor and predict nutrition and food situation in the country using the data from NNMB surveys and other factors like health, agriculture and economics.

(b) For Post No. 2 (SPORTS NUTRITION)

Essential : A doctorate or equivalent post-graduate qualification in General Medicine/Physiology/Biochemistry with original work as evidenced by published papers. Evidence of leadership with 10 years research/teaching experience in energy metabolism/sports medicine/sports physiology/sports nutrition and allied aspects.

Desirable : Experience in conducting research studies in Sports Nutrition.

Job Requirements : The incumbent is expected to carry out research studies in Sports Nutrition and allied aspects.

(ii) Senior Research Officer—One Post (NUCLEAR PHYSICS)

Scale of Pay of Rs. 3000-100-3500-125-4500.

Qualifications & Experience

Essential : 1st class M.Sc. in Nuclear Physics with 6 years experience in research/teaching. In case of candidates possessing doctorate or equivalent post-graduate qualification with original work as evidenced by published papers, two years experience in research/teaching is required.

Desirable : A doctorate in Nuclear Physics and experience in Whole Body or Low Level Radio Active Counting.

Job Requirements : The person to be appointed is expected to handle the whole body counter and carry out nuclear medical studies and low level radio active counting.

2. At the Food and Drug Toxicology Research Centre, Hyderabad

Assistant Director—One Post (NUTRITION & CANCER PROJECTS)

Scale of Pay of Rs. 3700-125-4700-150-5000.

Qualifications & Experience

Essential : A doctorate or equivalent post-graduate qualification with original work as evidenced by published papers in Biochemistry. Evidence of leadership with 10 years research/teaching experience in co-ordinating and guiding research in the field of Xenobiotics metabolism and chemical carcinogenesis.

Desirable : Ability to co-ordinate and guide research in the field of xenobiotics metabolism and chemical carcinogenesis.

Job Requirements : The person to be appointed is required to co-ordinate and guide research in the field of xenobiotics metabolism and chemical carcinogenesis.

3. At the National Institute of Cholera and Enteric Diseases, Calcutta.

Senior Research Officer—One Post—(EPIDEMIOLOGY)

Scale of pay of Rs. 3000-100-3500-125-4500.

Qualifications & Experience

Essential : MBBS degree from recognised university with six years experience (MD with two years experience) in the field of epidemiology & Public Health.

Desirable : M.D. in Epidemiology/Preventive and Social Medicine.

Job Requirements : Planning, execution and evaluation of Research studies in the division of epidemiology and taking part in the training activities of the institutes.

4. At the ICMR Headquarter's Office, New Delhi

Technical Officer—One Post

Scale of Pay of Rs. 2000-60-2300-EB-75-3200

Qualifications & Experience

(a) Master's degree in bio-medical science (Botany, Zoology, Pharmacy, Pharmacology, Biochemistry etc.) with at least three years research experience.

(b) Experience in copy-editing, dummy preparation, layout and other aspects of production in a reputed publishing house. Knowledge of printing, layout and other aspects of production (relating to off-set press essential).

Job Requirements : To assist in processing scientific matter for various publications of ICMR including ICMR Bulletin, Annual Report of the Director General and other technical publications.

Age : Below 45 years for Asst. Director/S.R.O. and 35 years for Technical Officer. SC/ST candidates allowed relaxation in accordance with Government of India rules.

Allowances as per Central Govt. rules are admissible on above pay scales.

Benefits of pension admissible. Private practice is not allowed. However, NPA, as per rules of the Council is admissible to medical graduates only.

Candidates called for interview for the post of SRO/Tech. Officer will be paid second class return rail fare and for the Post of Assistant Director first class return rail fare, on production of documents.

Applications from employees working in Central/State Govt. Departments, Public Sector Undertakings and Govt. funded research agencies must be forwarded through proper channel.

Application forms can be obtained from the office of the Director General, Indian Council of Medical Research, Post Box No. 4508, Ansari Nagar, New Delhi-110 029 on or before **4th December, 1987**. Forms duly completed should be sent to the Director General, Indian Council of Medical Research, Post Box No. 4508, Ansari Nagar, New Delhi-110 029 with a crossed IPO for Rs. 8/- payable to the Director General, Indian Council of Medical Research, New Delhi on or before **15th December, 1987**. SC/ST candidates are exempted from the payment.

Incomplete and late application will not be entertained.

INDIAN INSTITUTE OF TECHNOLOGY

KANPUR

Applications are invited for the following posts. The pay scales mentioned against the posts are likely to be revised after implementation of the recommendations of Fourth Pay Commission :

1. Registrar (1 post) — Rs 1500-2500.
2. Administrative Officer (2 posts) — Rs 1200-1900 (one for SC)
3. Asst Registrar (3 posts) — Rs 700-1600 (one for SC and one for ST)
4. Jr Administrative Officer (2 posts) — Rs 700-1600 (one for SC)
5. Estate Officer (1 post) — Rs 700-1600
6. Asst Librarian (1 post) Rs 700-1600 (Reserved for SC)
7. Chief Mechanical Engineer (1 post) — Rs 1500-2500
8. Superintending Engineer (1 post) — Rs 1500-2500
9. Senior Civil Engineer (1 post) — Rs 1200-1900 (Reserved for SC)
10. Liaison Engineer (1 post) — Rs 1200-1900 (Reserved for ST)
11. Asst Liaison Engineer (1 post) — 700-1600
12. Instrumentation Engineer (3 posts) — 700-1600 (one for SC and one for ST)
13. Physical Education Officer (1 post) —Rs 1200-1900 (Reserved for ST. General candidates will be considered if no suitable ST candidate is available)
14. Security Officer (1 post) — 700-1600
15. Coordinator (Training) T O.C (1 post) — 1200-1900 (Reserved for SC. General candidates will be considered if no suitable SC candidate is available)
16. Asst Engineer (3 posts) — Rs 650-1200 (one for SC)

Qualifications and Experience

Posts 1 to 5: A good Bachelor's degree in Arts/Science/Commerce/Engineering and a Postgraduate degree or Diploma in Public Administration/Management or recognised qualification as Chartered/Cost/SAS Accountant.

Post 1—Minimum of 15 years administrative experience; Post 2—Minimum of 10 years experience in Civic administration or Stores/Purchase operation; Post 3—Minimum of 8 years administrative experience; Post 4—Minimum of 8 years experience in Stores/Purchase operations; Post 5—minimum of 8 years experience in estate matters;

Post 6— M.Lib. with B. Tech/Master's Degree.

Post 7— A good Bachelor's degree in Mechanical Engineering with a minimum of 15 years experience.

Post 8— A good Bachelor's degree in Civil Engineering with a minimum of 15 years experience.

Post 9— A good Bachelor's degree in Civil Engineering with a minimum of 8 years experience.

Post 10— A good Bachelor's degree in Engineering with 8 years experience in Liaison work.

Post 11— A good Bachelor's degree in Engineering.

Post 12— A good Bachelor's degree in Electronics/Electrical/ Mechanical Engineering.

Post 13— Master's degree in Physical Education with minimum of 10 years experience in Physical Education Training and Coaching.

Post 14— Graduate with 15 years Security Experience or a Deputy S.P./Asst Commandant of the Central/State Police Force or a Commissioned Officer of Army/Navy/Air Force with 6 years experience.

Post 15— B. Tech./Master's degree with at least 8 years experience in rural development activities including organisation of training programmes.

Post 16— Diploma in Civil/Electrical/Mechanical Engineering with at least 13 years experience in works.

Other details regarding preferential/desirable qualifications, experience and service benefits available will be supplied along with the prescribed form obtainable free of charge by sending a self-addressed unstamped envelope of 25 cm x 11 cm to the ADMINISTRATIVE OFFICER II, INDIAN INSTITUTE OF TECHNOLOGY, KANPUR-208016. Last date for submitting completed application is **December 15, 1987.**

CLASSIFIED ADVERTISEMENTS

KOTA OPEN UNIVERSITY

KOTA

Advertisement No. 2/87/1759 **Dated : 6.11.87**

Applications are invited for the following posts on prescribed form, obtainable at a price of Rs. 5/- from the Office of the Registrar, personally or by making written request accompanied by self-addressed envelope of 23 x 10 cms. and crossed Indian Postal Order(s) of Rs. 10-50 in the name of the Registrar, Kota Open University, Kota.

The application forms duly filled in along with necessary documents and crossed Indian Postal Order(s) of Rs. 10/- in favour of the Registrar, Kota Open University, Kota, should reach this office by **10th December, 1987.**

Persons already in employment must send their applications through their employer.

Sl. No.	Subject	Reader 1200-50-1300-60-1900	Lecturer 700-40-1100-50-1600	Specialization
1.	History	1	1	Ancient, Modern or Medieval Indian History.
2.	Indian Culture & Tradition	1	1	Ancient Indian History, Philosophy & Languages.
3.	Political Science	1	2	Political Theory or Indian Government & Politics
4.	Mathematics & Computer Science	1	1	Background of Computer Science
5.	Commerce	1	2	—
6.	Physics	—	1	Theoretical Physics.
7.	Management	1	2	Business Management, Tourism & Hotel Management, Policy Sciences.
8.	Hindi	—	1	Editing
9.	English	1	1	Editing
10.	Economics	1	2	Economic Theory Banking/Rural Economics.
11.	Library Science	1	1	—
12.	Food, Nutrition & Health Management	—	1	—
13.	Journalism	1	—	—
14.	Law	—	1	Labour Law & Personnel Management.

Qualifications

For Readers

Good academic record with Doctoral Degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of Teaching/Research.

For Lecturers other than Management & Mathematics & Computer Science.

(a) A Doctor's Degree or research work of an equally high standard; and

(b) Good academic record with at least Second Class (C in the seven point scale) Master's Degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regard to the need for developing interdisciplinary Programmes, the degrees in (a) and (b) above may be in relevant subjects :

Provided that if the Selection Committee is of the view that research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increment until he fulfils these requirements.

For Lecturer of Management

Essential : (a) Master's Degree in the relevant subject from an Indian University with at least 55% marks or its equivalent grade and good academic record or equivalent degree from a foreign University.

OR

(b) Master's Degree in Management or Master's Degree in any discipline with Diploma in Management.

For Lecturer of Mathematics & Computer Science

Essential : (a) Master's Degree in the relevant subject from an Indian University with at least 55% marks or its equivalent degree from a foreign University.

OR

(b) Master's Degree in Computer Science or Master's Degree in any discipline with a Diploma in Computer Science or a Bachelor of Engineering in Computer / Electronics and Telecommunications.

Additional Qualifications

Experience and proven ability in imparting education through communication media and innovations in distance teaching methods and materials.

Job Requirement

Academic staff of this University will have the following responsibilities :

1. Curriculum and Course Development.
2. Preparation of self-instructional print material
3. Preparation of and participation in the production of audio visual materials.
4. Participation in contact programmes, workshops, week-end programmes, summer institutes, face-to-face teaching, etc.
5. Undertaking of research individual, institutional sponsored, etc.

In addition to pay, the posts carry all allowances and other benefits as per University rules. Higher start in the prescribed scale may be given in deserving cases on the recommendation of the Selection Committee. Pay scales are likely to be revised.

The University reserves right to increase or decrease the number of vacancies advertised.

Applications received after the last date or without complete information will not be entertained.

It is not obligatory on the part of the University to call for interview every candidate who possess the essential qualifications.

The choice of the committee may not necessarily by confined to those who apply formally.

All the posts are transferable to Regional & Study Centres.

REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY

MADRAS 600036

Advertisement No. IITM/R/7/87

IIT MADRAS is a higher technological institute having ongoing collaborative programmes with several leading technical universities of Federal Republic of Germany, France, USA, UK and Australia. Apart from its regular academic programmes at undergraduate, master's and doctoral levels, the Institute is actively engaged in sponsored research and industrial consultancy.

The Department of Computer Science and Engineering is actively involved in teaching and research in several modern areas of computer science, such as Artificial Intelligence, Fifth Generation Computing, VLSI Design, Computer Networks, Speech Recognition, Algorithm for parallel and VLSI systems, Simulation and Modelling, Microprocessor based system design etc. In particular, the department has major sponsored research projects in Expert Systems, VLSI Design, Computer Networks and Speech Recognition.

The Department has well equipped laboratories for work in the areas of digital circuits, microprocessors, computer systems development, information sciences, speech and vision, CLASS project, system software, etc. There are several mini and micro computer systems available to support the teaching and research activities of the Department.

As a central facility, the department has also an IBM 370/155 and IPL 4443 main frame systems to cater to the needs of the various departments/centres/sections of the Institute. A new computing facility consisting of a Siemens 7580-E time-sharing system with 16 MB of memory and 80 terminals will be installed shortly. The system will be located in a specially designed building costing about Rs. 1.0 crore.

(A) The Institute invites applications for the following positions in the Department of Computer Science and Engineering to take up the challenging tasks in the Computer Centre.

The pay scales are noted against each post (likely to be revised). The approximate gross emoluments given in brackets includes HRA at the minimum of the pay scale.

(1) Senior Systems Engineer/Senior Systems Officer—Rs. 1500-60-1800-100-2000 (Rs. 3405-35)

(2) Systems Engineer/System Officer Rs. 1200-50-1300-60-1900 (Rs. 3075.35)

(3) Assistant Systems Engineer/Assistant Systems Officer—Rs. 700-40-1100-50-1600 (Rs. 2123.98)

If the candidates are not found suitable for the post applied for, they may be considered for the lower post advertised depending upon their academic background and relevant experience.

Posts are permanent or likely to become permanent. Besides pay, posts carry allowances and retirement benefits as per Institute rules. The allowances correspond at present to those admissible to the Central Government employees stationed at Madras.

Reservation for Scheduled Caste/Scheduled Tribe candidates is as per rules. The experience is relaxable for SC/ST candidates as per rules.

Minimum Qualifications and Experience

(1) Senior Systems Engineer/Senior Systems Officer

B. Tech. or equivalent with First Class or M.Sc. with first class with a minimum of 12 years experience relevant to job requirement, of which 4 years should be in a supervisory capacity

OR

M. Tech. or equivalent with first class or Ph.D. with a minimum of 10 years experience relevant to job requirement, of which 4 years should be in a supervisory capacity.

Should involve procurement, installation, development and operations of computer systems. Experience in organizing maintenance of a computer. Familiarity and ability to deal with hardware and sowftware problems. Supervision of the work of a group of computer professionals. The candidate should have a good academic record.

(2) Systems Engineer/Systems Officer

B.Tech. or equivalent with first class or M.Sc. first class with 7 years relevant experience.

OR

M.Tech. or equivalent with first class with 5 years of relevant experience.

Candidates must have a good academic record. Experience in organizing client services and planning for client needs. Experience in maintenance of computer hardware/software.

(3) Assistant Systems Engineer/Assistant Systems Officer

B.Tech. or equivalent with first class or M.Sc. with first class with two years relevant experience.

Experience in installation of software, and design and development of application software.

(B) Medical Officer (Paediatrics)

The Institute also invites applications for the post of Medical Officer (Paediatrics) for the Institute Hospital. Scale of pay Rs. 700-40-1100-50-1600 plus allowances (gross emoluments at the minimum of pay scale is Rs. 2123.98 besides NPA on slab basis).

Qualifications and Experience

M.B.B.S. of an University recognised by the Indian Medical Council with Postgraduate diploma in Child Health (DCH) and with three years professional experience.

Accommodation : Licence fee free unfurnished quarter will be provided in the Campus and the appointee has to stay therein.

General Informations/Conditions

1. Experience means, experience gained after the qualifying degree.

2. The Institute reserves the right to restrict the number of candidates for the interview to a reasonable limit on the basis of qualifications and experience higher than the minimum prescribed in this advertisement.

3. The Institute also reserves the right of rejecting any or all applications without assigning any reason therefor.

4. The Institute further reserves the right to recruit only to a few cadres among the categories advertised.

For application form please address the Registrar, Indian Institute of Technology, Madras-600036, with a self-addressed stamped (Re. 1/-) envelope (22 cm X 17 cm). Applicants are requested to indicate clearly the post for which they wish to be considered. Persons in the service of Government establishments and Public Sector Undertakings should apply through proper channel.

Completed applications with a crossed non-refundable current Indian Postal order of the value of Rs. 7.50 (Rs. 1.90 for SC/ST candidates) drawn in favour of the Institute payable at IIT Madras Post Office should be sent to the Registrar of the Institute.

The last date for the receipt of completed applications is **8th December, 1987.**

DEAN OF ADMINISTRATION

SAURASHTRA UNIVERSITY

Kalawad Road, Rajkot-360005

Applications in the prescribed forms are invited for the undermentioned posts. Application forms alongwith detailed requirement of qualifications, experience and other necessary details regarding these posts will be available from the Registrar, Saurashtra University, University Campus, Kalawad Road, Rajkot-360 005 on sending a self-addressed envelope of the size 23 x 11 cms with postage stamps worth Rs. 3-80 for the post Nos. 1 to 5 and Rs. 1-40 for the post No. 6. Applications in seven copies for the post Nos. 1 to 5 and one copy for the post No. 6 should reach this office on or before **7-12-1987** alongwith crossed Indian Postal Order worth Rs. 10.00. Qualifications, experience and specialization as mentioned in the details to be supplied with application form will be considered final.

1. Professor of Home Science—1

Must possess M.Sc. Degree in Home Science with specialization in Food and Nutrition or M.Sc. in Nutritional Biochemistry.

2. Reader in Home Science—1

Must possess M.Sc. degree in Biochemistry or Organic Chemistry or Microbiology with research and publications in Nutritional chemistry or child nutritional or therapeutic nutritional.

3. Lecturer in Home Science—1

Must possess M.Sc. degree in Biochemistry or Organic Chemistry or Microbiology with research publication in Nutritional chemistry or child nutritional or therapeutic nutritional.

4. Reader in Education—1

Specialization in Research Methodology, Educational and Vocational Guidance and Psychological Testing.

5. Lecturer in Commerce—1

In addition to the qualifications prescribed the person should be M.Com. with Accountancy. Those having C.A./A.I.C.W.A. in addition to M.Com. degree will be preferred.

6. Junior Research Fellow—2

Temporary for a period upto three years which may be extended. National Examination Test (NET) candidate will be paid Rs. 1000/- fixed per month, others Rs. 800/- fixed per month. Candidate must be M.Sc. in atleast Higher Second class in branch of Biological Science/Geology/Biochemistry/Microbiology.

Another posts are permanent. Age ordinarily not exceeding 55 years. The age, educational qualifications and experience may be relaxed in suitable cases.

Pay Scales

1. Professor : Rs. 1500-60-1800-100-2000-125/2-2500

2. Reader : Rs. 1200-50-1300-60-1600-assessment-60-1900

3. Lecturer : Rs. 700-40-1100-50-1300-assessment-50-1600.

R.A. Desai
REGISTRAR

BANARAS HINDU UNIVERSITY

CORRIGENDUM TO ADVERTISEMENT NO. 4/1987-88-ITEM NO. 45

The number of vacancies for the post of Lecturer in Physics (Item No. 45), Faculty of Science may be read as **THREE** instead of two. Those who have applied for the post in response to Advt. No. 5/1985-86 timely also need not apply again.

SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

(DEEMED UNIVERSITY)

Vidyagiri* Prasanthinilayam 515134 (AP)

Applications are Invited for the Following Post :

Prasanthinilayam Campus (for Men)
Non-Academic
Stenographers—2 Nos. (English)
Qualification—Graduate in English medium
Speed of 120 w.p.m. in Shorthand and 45 w.p.m. in Typewriting
Scale of Pay—Rs. 575-2-775-25-950
Dearness and other allowances as per Institute rule.
Selected candidates will be governed by the Contributory Provident Fund-cum-Gratuity Scheme of the Institute.
Applicants may write to the Registrar within 15 days of the date of advertisement for the prescribed application form.

REGISTRAR

ANNAMALAI UNIVERSITY

ANNAMALAINAGAR

NOTIFICATION No. 12/87

Dated : 29-10-1987

Applications are invited in the prescribed form for filling up the following teaching posts in various Faculties of this University. Applications can be had from the undersigned on payment of Rs. 10/- (not refundable) by cash/money order/postal order. Applications (with 5 additional copies) should reach the undersigned on or before **27th November, 1987.**

S. No.	Name of the Post	Number of Post
	FACULTY OF ARTS	
1.	Professor of Linguistics (Temporary)	1
	FACULTY OF SCIENCE	
2.	Professor of Inorganic Chemistry	1
3.	Reader in Hydrogeology	1
4.	Lecturer in Statistics for Computer Studies	1
5.	Lecturer in Centralised Instrumentation Laboratory	2
	FACULTY OF ENGINEERING & TECHNOLOGY	
6.	Professor of Computer Science	1
7.	Reader in Computer Science	1
8.	Lecturer in Computer Science	1
9.	Programmers	2
10.	Lecturer-cum-System Analyst	2
	FACULTY OF EDUCATION	
11.	Lecturer in Education (Commerce)	1
	FACULTY OF AGRICULTURE	
12.	Lecturer in Agronomy	1
	DIRECTORATE OF DISTANCE EDUCATION	
13.	Professor of Education	1
14.	Reader in Economics	1

Qualifications

Professor : (For Serial Nos. 1, 2 & 13)

A person with a distinguished academic record with Doctoral Degree and with 10 years of experience of teaching at Post-Graduate level and of guiding research at Doctoral level with publications of high quality to his credit.

OR

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research, experience of guiding research at Doctoral level.

Specialisation for Serial No. 2

1. The candidate should have undergone the M.Sc., Course with specialisation in Inorganic Chemsitry or should have done research in the area of Inorganic Chemistry for the Ph.D., degree.

2. The candidate should have rich experience both in teaching and in guiding research in the area of Inorganic Chemistry.

Those who have already applied for Professor of Inorganic Chemistry in response to University's advertisement made in August 1987 need not apply again.

Professor for Serial No. 6

a. Ph.D., degree in Computer Science with 5 years of teaching experience at Post-Graduate level.

OR

Ph.D. degree in any Engineering with experience in Computer Applications and Computer Centre and 5 years of teaching experience at Post Graduate level.

OR

M.E. degree in Computer Science or in any other Engineering discipline with 10 years of teaching/industrial experience in the field of Computer Science and Applications.

b. Research and/or industrial experience in the area of Computer Science, Technology and applications is preferable. Research experience with technical publications will be given credit.

Reader for Serial No. 3 & 14

A person with a good academic record with a Doctoral Degree or equivalent published work. Evidence of being actively engaged in (i) Research or (ii) innovation in teaching methods or (iii) Production of teaching materials.

About five years' experience of teaching and/or research provided that atleast three of these years were as Lecturer or in an equivalent position.

Specialisation for Serial No. 3

A Post M.Sc. Degree with specialisation in Hydrogeology and P.G. teaching experience in Hydrogeology for not less than ten years.

Reader for Serial No. 7

a. Ph.D., degree in Computer Science

OR

Ph.D., degree in any Engineering with two years experience in Computer Applications and Computer Science.

OR

M.E. degree in Computer Science or any other Engineering discipline with 5 years of teaching experience in the field of Computer Science and Applications.

b. Research and/or industrial experience in the area of Computer Science, Technology and application is preferable. Research experience with technical publication will be given credit.

Lecturer for Serial No. 4

a. A person with a Doctorate degree or research work of an equally high standard, and

b. Good Academic record with atleast second class Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Knowledge of Computer Programming by possessing Diplomas or Certificates in Computer Programming.

Lecturer for Serial No. 5

B.E., (Electronics & Instrumentation)

OR

M.Sc., (Applied Physics) with specialisation in Electronics.

OR

M.Sc., (Tech.) in Instrumentation

AND

Sufficient experience in handling, operating and repairing instruments like spectrophotometers, osciloscopes, X-Ray fluorescence (XRF), Polarographs etc.

Preference will be given to those who have already got sufficient experience in Centralised Instrumentation Service Laboratories.

Lecturer for Serial No. 8

M.E., Computer Science degree

OR

M.E., in any Engineering with atleast two years experience in Computer Science and Applications.

OR

M.Sc., Computer Science with atleast one year experience.

Programmers for Serial No. 9

a. M,Sc., in Mathematics, Physics or Statistics with specialisation in Computer Oriented subjects or Microproceessor OR B.E., OR M.C.A.,

b. Three years experience in a Data Processing environment as a Programmer.

Lecturer-cum-System Analyst for Serial No. 10

a. M.C.A., or B.E., or M.Sc., in Mathematics or Physics or Statistics with specialisation in Computer Oriented subjects or Microprocessor.

b. Three years experience in Programme development and system analysis.

c. Teaching experience is preferable.

Lecturer for Serial No. 11

a. A person with a Doctor's degree in Education or research work of an equally high standard; and

b. Good academic record with atleast second class Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

OR

a. A person with a Doctor's degree in any University discipline of research work of an equally high standard; and

b. Good academic record with atleast second class M.Ed../M.Phil., degree in Education from an Indian University or an equivalent degree from a foreign University.

The candidate should prossess M.Com., and M.Ed., degree.

Lecturer for Serial No. 12

A person with a Ph.D., degree or Master's degree in Agronomy with three years experience.

Scale of Pay

Professor : Rs. 1500-60-1800-100-2000-125/2-2500 with admissible allowances.

Reader : Rs. 1200-50-1300-60-1900 with admissible allowances.

Lecturer **Programmer** **Lecturer-cum-Analyst**	Rs. 700-40-1100-50-1600 with admissible allowances

These scales of pay will be revised on the basis of the recommendations of University Grants Commission shortly.

Candidates invited for interview for the post of Professor will be paid a single first class to and fro railway fare and for the post of Reader a single second class railway fare.

Those who are in service should route their applications through proper channel.

R. Rajamanickam
REGISTRAR

BHARATHIAR UNIVERSITY
COIMBATORE-641 046

NOTIFICATION

UGC—Junior Research Fellowships

Applications are invited from candidates who have qualified in the UGC National Educational Test for the award of UGC Junior Research Fellowships allotted to this University ; at any one time' basis.

The University offers the following M. Phil./Ph. D. programmes at its University Departments.

1. Mathematics
2. Statistics
3. Physics
4. Chemistry
5. Botany
6. Zoology
7. Environmental Sciences
8. Computer Sciences
9. Tamil
10. Linguistics
11. Sociology
12. Psychology
13. Economics
14. Population Studies
15. School of Management Sciences and Entrepreneur Development.

Applications, with relevant enclosures may be submitted (in duplicate) in plain paper furnishing the following particulars :

1. Name
2. Address
3. Father/Husband's Name
4. Age and Date of Birth
5. Religion, Caste (Specify Whether BC/SC/ST/Others)
6. Educational qualifications (from degree level) indicating course completed, College/University, major subjects, specialisation, Marks/Division/Grades obtained etc.
7. Details of UGC NET examination passed, indicating Centre, Reg. No. subject, date of test, No. & date of the award letter (attested copy to be enclosed), etc.
8. Department
9. Discipline or Area of proposed research :
10. Whether registered for M. Phil./Ph.D. with details :
11. Any other relevant particulars :

Applications should reach the Registrar, Bharathiar University, Coimbatore —641 046 on or before 23-11-1987.

Prof. P.N. Silambannan
REGISTRAR

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157

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University News

MONDAY, NOVEMBER 23, 1987 Rs. 1.50

gn Students' Advisors meet in New Delhi. Seen from left to right are Shri Lalit Mansingh, Director General, Indian Council for Cultural Relations and Shri P.L. Sinai, Chairman, Inter-Ministerial Standing Committee on Foreign Students.

CLASSIFIED ADVERTISEMENTS

REGIONAL RESEARCH LABORATORY

JORHAT (ASSAM)

(Council of Scientific & Industrial Research)

Advertisement No. 6/87

Applications in the prescribed forms (available free of cost from the Administrative Officer, Regional Research Laboratory, Jorhat-6 (Assam) on sending a self-addressed big envelope affixing 0.45 paise stamp with a written request stating advertisement number and name of the post) are invited from candidates for the following positions for RRL, Jorhat.

(1) Scientist 'B'—1 Post
(Reserved for S.T.)
Rs. 2200-75-2800-EB-100-4000/-

EQ : M.Sc. 1st class in Botany or Agril Botany with publications in the field of Soil Microbiology/Ph.D. in Soil Microbiology/Microbial fermentation (Microbial Enzymes).

(2) Scientist 'B'—1 Post
(Reserved for S.C.)
Rs. 2200-75-2800-EB-100-4000/-

EQ : B.E. 1st class in Pulp & Paper Technology

JR : To participate in the R&D work in the field of Pulp & Paper Technology. The person selected will have to undertake time-bound project under senior scientist.

(3) Medical Officer—1 Post.
Rs. 2200-75-2800-EB-100-4000/-

EQ : MBBS from a recognised university and registered under Medical Council of India. One year's housemanship in Medicine.

JR : The selected candidate shall work as a general duty Medical Officer in the Medical Centre, equipped with Pathological. Bio-chemical and ECG facilities for all outdoor patients during routine hours. He shall have to reside inside the campus and to attend to emergent duties outside routine hours as and when needed.

GENERAL

1. The Candidates other than S.T./S.C. may also apply. Their cases will be considered only if no suitable Scheduled Tribe/Scheduled Caste candidates are available.

2. Higher starting salary may be given to exceptionally qualified and experienced candidates on the recommendation of the Selection Committee.

3. In addition to basic pay, dearness allowance is admissible as per CSIR rules in force. Total emoluments at the minimum of the scale will be Rs. 2456/- plus Rs. 100/- if no accommodation is provided. Free medical treatment, leave travel concession, pensionary benefits etc. are also admissible as per rules. MEDICAL OFFICER will be entitled to Non-practising Allowance of 600/- P.M.

4. Persons who are already in Govt./Semi-Govt. organisation should apply through proper channel. Candidates are required to specify and attach documentary evidence (attested copies) of E.Q. and exp. claimed.

5. The applications in the prescribed form together with crossed postal order of Rs. 8/- payable to the Director, RRL, Jorhat-6 (Assam) should reach him by **9.12.87. S.C./S.T. candidates need not pay any fee (IPO) along with their applications.**

Applications received after this date will not be entertained. Candidates called for interview will be paid 2nd class railway fare by the shortest for the to & fro journey.

6. Since it is not possible to call all the eligible candidates for interview/personal discussion, the applicants to be shortlisted for the purpose and the decision of the Council/Laboratory will be final in this regard.

7. Indian candidates applying from Foreign Country may send their applications upto a fortnight after closing date in standard application form supplied by our Missions Abroad and without application fee.

8. Canvassing in any form and or bringing in any influence, political or otherwise, will be treated as disqualification for the post(s).

INTERIM ENQUIRIES WILL NOT BE ATTENDED TO

KUMAUN UNIVERSITY

NAINITAL

Advertisement No. Affl.1138

Dated : 9-11-87

Applications for one temporary post of Reader History in the Scale of Pay Rs. 3700-5300 are invited by **18 December, 1987** on the prescribed form obtainable from the Office of the Registrar, Kumaun University, Nainital-263 001 U.P.) by sending a self addressed 9" x 6" envelope and crossed postal order/Bank Draft for Rs. 7/- payable to Finance Officer, K.U., Nainital. Money orders are not acceptable.

Qualification

(i) Good academic record with a doctorate degree or equivalent published work and active engagement in research or innovation in teaching methods or production of teaching materials; and

(ii) Five years experience of teaching or research including at least three years as Lecturer or in an equivalent position.

Further details will be provided with application form. Application form will not be sent by post after 12 Dec., 1987. Applications on plain papers and received after due date are not acceptable.

R.C. Pant
REGISTRAR

BIHAR UNIVERSITY

MUZAFFARPUR

Advertisement Notice

Applications are invited for award of Junior Research Fellowship of the U.G.C. from the candidates who hold at least high second class Master's degree and have passed N.E.T. Examination conducted by the U.G.C. in Geography, History, Hindi, Maithili, Urdu and Persian. The Fellowship amount is Rs. 1000/- per month plus contingency grant admissible as per U.G.C. rules.

The applications on plain paper with details of academic qualification, research work done or being pursued, particulars of N.E.T. examination passed, date of birth, permanent and present address alongwith the attested copies of marks sheets for examinations passed (Matriculation onward) must reach the undersigned latest by the **5th December, 1987.**

M. Jha
DEVELOPMENT OFFICER

UNIVERSITY NEWS

VOL. XXV NOVEMBER 23
No. 47 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor :
SUTINDER SINGH

Need for Intellectual Independence

7 DEC 198
F. T. R. I.

A. S. Paintal

Prof. A.S. Paintal, Director General, Indian Council of Medical Research (ICMR) in his Presidential Address delivered at the annual general meeting of the Indian National Science Academy (INSA) on 5 October, 1987 deplored our total dependence on the western thought and raised some pertinent questions which our experts on international committees should ask themselves. He exhorted the Scientific community to think independently and have India's interests foremost in their minds while accepting any foreign assignment. Excerpts :

At present as things stand, we are almost fully dependent on western thought in the field of Science and Technology and we do not exercise intellectual independence. How has this come about ? The most important and effective independent thinker of India was Mahatma Gandhi. Under his leadership a considerable number of people learnt to think independently and put forward ideas that were radically different from what western thinkers were used to. Then came independence and India felt the urgent need to industrialise and make economic progress. But India did not have any technology worth the name for doing this, nor did we have the knowledge for developing technology. All the Technology was with the west and so from then we became wholly dependent on the west for technology. Worse, we made no effort to Indianize and adapt the technologies and so we also became intellectually dependent on the west. We stopped thinking independently and did what was fashionable in the west and worked on those areas of Science in which western scientists worked. We invited eminent Scientific Advisers from the West and developed our Scientific Institutions along western lines. We established the kind of laboratories and institutions that had flowered in Britain before World War II and carried out work in those fields that were fashionable in the West before World War II. We did not think about India's needs in the field of Science and Technology ourselves. We depended on what the west thought. The west thought that we needed to have Institutes of Technology. And so we established them in the way and for the purpose that they thought fit. We did the same in the field of medical sciences. In one flash we altered our system of medical education so that the pattern fitted in with the American system. Western experts advised which Scientific Institution we should establish. We did no thinking ourselves on this subject. And so today we have a situation where we have no organisation or Institution or arrangement for carrying out R & D in the field of air conditioning for beating the heat. This is something that should have had top priority in India. Everyone knows that the most suitable temperature at the work place is about 22 to 27°C depending on humidity, level of air flow and permitted clothing. The industrial output of the cold countries of the west increased greatly after they learnt to raise the temperature of their work places to this level. We have failed to realise this. One does not know how many thousands of crores of rupees we would gain annually by increased work efficiency if we could lower the temperature of our work places to below 28°C. Should the Scientists and Technologists not have given this matter top system. Instead of good teaching, it wanted both teaching and research. Society got research from the university system, but it was at the cost of dedicated teaching. Society should not lament if it is not getting the same dedicated teaching as it was getting before.

(ii) Sudden Explosion in Number of Students and Teachers

The number of students, teachers, schools, colleges and universities has increased by more than twenty times in forty years. Previously students and teachers came from certain sections of society, which valued scholarship and valued education for its sake alone. Now many students are coming from other sections of society who did not earlier had the benefit of education and for whom education is only a means of economic and social advancement. The earlier classes were proud of their traditions and value system. The new classes which came into the system were the earlier exploited classes which were never given a chance to develop pride in their cultural and educational traditions. We have to pay some price for the goal of social justice which we have set for ourselves.

(iii) Too Much Security of Service

Before independence, college managements were strong and could take action against erring teachers. The power was often misused, but it was still a deterrent and no teacher could afford to miss classes. After independence, teachers were given complete security of service and the managements were made powerless. There is a period of probation of one or two years, but this is more or less a formality.

In Westen countries, the probation may last four to six years and is far from being a formality. The teacher has to work really hard to earn his tenure. Nobody is punished for his political views, but there is every chance of a teacher being sacked if he is a bad teacher. Students' opinion plays an important role and no teacher can hope to get confirmed unless his students in twenty or more courses he may have taught in the first few years are more than satisfied with his teaching.

(iv) Students' Non-insistence on Good Teaching

Students teaching reaction surveys which are quite common in Western countries are almost unknown here. In the West, the rating given by students is communicated to very teacher. Every teacher, however senior feels miserable if his rating is below a certain level. The students very often conduct these surveys themselves and insist that these surveys be taken into account in confirmation and promotion of teachers.

(v) Managements' Non-insistence on Good Teaching

Managements can insist on good teaching records at the time of promotion, but they keep no records at all ! The only information available about teaching consists of the opinions of the head of the department and the principal and their opinions are invariably satisfactory since in the case of unsatisfactory reports the onus is on them to prove their statements. Since all teachers are good teachers, the only factors at the time of consideration of promotion are of length of service and research publications. There can be some objective criteria for judging research quality but these are not followed. Some experts are asked their opinions about the candidate's research but these experts have not to substantiate their opinions. As such candidates find it more convenient to be in the good books of experts and of members of management committees than to do good teaching and research.

(vi) Lukeworm Attitude of UGC towards Good Teaching

Some years ago the UGC decided to launch a Faculty Improvement Programme for improving teaching in undergraduate colleges. It appointed a committee of university professors which decided that the best way to improve teaching in undergraduate colleges is to give leave to faculty members to do their Ph.D's. When asked how a Ph.D. degree in a specialised field will benefit undergraduate teaching, the members replied "Every research effort should improve teaching. We university professors are not competent to give training in pedagogy, nor do we know how to teach the present undergraduate courses better. We can give only Ph.D. training and this will help in providing more scholars for our Ph.D. programmes". This shows how research dominates the thinking of university professors who may have no respect for good teaching. If this is the attitude of leaders in the educational system, how can we expect the teachers to have an intense desire to give their best to teaching ? Perhaps the university professors have first to revise their attitude to good teaching.

(vii) General Erosion of Human Values in Society

The values of service, sacrifice and integrity are at a discount in society and the teaching profession cannot escape the impact of this erosion.

Some Suggestions

From the above discussion, it appears that teachers and students have not changed much; it is the value system of society that has changed. Earlier the system was such that students were motivated to learn and teachers were motivated to teach. Instead of decrying the erosion of the desire to give, let us rebuild the system so that the desire to give on the part of teachers and the desire to take on the part of the students becomes natural. Of course both these desires have to be built in simultaneously. We cannot build the desire to give, unless simultaneously we build up the desire to take.

In the West, the students are highly motivated to learn because the job market is highly competitive and almost perfectly fair. The teachers are highly motivated to teach, because those who do not teach are eliminated from the system. There is pressure on them from the students, there is pressure on them from the colleagues and there is pressure on them from the authorities. All these pressures lead to the 'desire' to give their best.

The task of restoring motivation in our educational system is not going to be easy, since it requires hard decisions on the part of everybody. The first component of a New Educational Policy has to be the willingness to take and implement hard and unpleasant decisions.

(i) Copying in examinations should be completely eliminated by the joint efforts of students, teachers, parents, educational administrators, law and order authorities, radio, TV and the press; since unless copying is eliminated, there will be no desire to 'take' on the part of students. Students' organisations should condemn it in no uncertain terms and should form voluntary squads to check it. Teachers' organisations should see to it that no teacher allows anybody to copy. The law must be made sufficiently strong so that those who copy receive the same jail punishment as those who cheat or indulge in forgery. The TV and press should launch a campaign against copying with the same enthusiasm with which it has launched a campaign against drugs.

(ii) The wide choice in question papers like "Attempt any five questions out of twelve" should be banned. At the most internal choice in questions may be permitted. It must be seen that students read the entire syllabus and attend classes throughout the year and teachers have to teach regularly.

(iii) The sanctity of the actual number of teaching days should be kept at any cost inspite of strikes by students and teachers. Summer vacations, Sundays and holidays may be cut down, but not the number of teaching days. There should be no accelerated teaching programmes. In fact the number of hours required for teaching any course should be prescribed and observed strictly inspite of all disturbances. The teachers record should show the actual material taught in each period separately. This is the practice in all good institutions.

(iv) There should be regular, continuous correction of assignments of students even in an external exami-

UNIVERSITY NEWS

A Weekly Chronicle of Higher Education

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Association of Indian Universities
AIU House, 16 Kotla Marg
New Delhi 110002

nation systems. Teaching assistants for grading assignments should be provided to teachers from among the senior students and research scholars.

(v) Students reaction surveys shoul be conducted by independent groups and the results should be communicated to the teacher in order to enable him to improve his teaching. He should keep a record of all the courses he has taught, the innovations he has introduced, students' reactions etc. and produce them at the time of his assessment for promotion.

(vi) Contact hours should be reduced and students should be asked to read portions from textbooks themselves. They should be expected to buy textbooks or get them on loan from book banks. It must be ensured that every student has the textbooks with him on-full-time basis.

(vii) The system of bank loans to students should be developed on a large scale. Bank loans for textbooks should be freely available.

(viii) All efforts should be made to find part-time jobs for students since students who earn and learn can be more serious. This is very common in the West.

(ix) Every university should prepare detailed guidelines in consultation with teachers as to what is expected of teachers by way of teaching, research and community service. The absence of these guidelines has done a lot of harm since it makes assessment of teachers subject to political pressures.

(x) Teachers are supposed to keep uptodate in their field of knowledge. All scholarly activities on the part of teachers, and not only research, should be given weightage at the time of promotion.

(xi) We must ensure perfect fairness in admissions, appointments and promotions. The processes must be made as open as possible and those responsible for it must be made as accountable as possible. Teachers will have the desire to give once they are convinced that this desire to give will be appreciated by their students, will be recognised by their colleagues and will be rewarded by those in power, in a fair manner.

Concluding Remarks

Every system depends for its success on its structure of incentives and rewards. These rewards may be in the form of appointments, promotions, additional increments, appreciation by students or praise by colleauges. These may be tangible in terms of money or intangible in terms of prestige. The guidelines for the incentives should be clearly spelt out and these should be fairly implemented. If we can find ways and means to motivate students to work hard in learning and motivate teachers to work hard for both learning and teaching, we can see again the revival of desire to give by teachers and the desire to take by students. ☐

National Conference on Role of Universities in Implementation of New Education Policy

The Association of Indian Universities will organise, in collaboration with Osmania University, a National Conference on Role of Universities in Implementation of New Education Policy on December 18 & 19, 1987 at Hyderadad.

The New **Education Policy (NEP)** visualises the role of higher education as providing people with an opportunity to reflect on the critical, social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills.

The role of universities is crucial in the matter since one of the important functions of universities and institutes of higher learning is to provide specialized scientific and technical skills, imparting of knowledge, contributing to every sector of national development and improving social conduct and behaviour. Thus, a major share of responsibilities, as envisaged in the NEP, rests with the universities and other educational institutions. It becomes imperative for the educational community to try to define some of the important issues involved in the management of higher education, the efficiency improvement, the financing of higher education, youth services and physical fitness programmes, education in human values, etc. in the light of the NEP recommendations.

The deliberations of the Conference will focus on the following topics :

I. Management of Higher Education
II. Improvement in Efficiency
III. New Strategies in Higher Education

PROGRAMME

December, 18, 1987 (Friday)

10.00 A.M.	INAUGURATION
11.30 to 1.00	SESSION I
2.00 to 4.30	SESSION II

December 19, 1987 (Saturday)

9.00 to 11.30 A.M	SESSION III
12.00 to 1.30	SESSION IV
2.30 to 4.30	SESSION V (Plenary)

Convenor

Dr. V. Natarajan
Project Director (Exams.)
Association of Indian Universities
AIU House, 16 Kotla Marg
New Delhi 110002.

Telephone : 3310059
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University Administration in India
—An Overview

H.A.S. Jafri*

Administration, broadly speaking, is an activity of groups cooperating towards a common goal. It consists of an organisation and the use of men and material to accomplish a purpose. Applying these general definitions to the University Administration, the purpose or objective of these highest seats of learning is dissemination and advancement of knowledge through teaching and research. These are essentially academic activities but the task cannot be accomplished without an administrative infrastructure—which brings in the non-academic staff. In the universities therefore, administration involves students, teachers and non-academic staff. It is in fact a joint, collective academic venture to keep the university organisation moving and for the accomplishment of the defined objectives. If the students are on a rampage, there is indiscipline problem on the campus, the teachers go on strike or the non-academic staff stop work, in either of the cases it may lead to the collapse of administration adversely affecting the very purpose for which the universities are established. That is not for a moment to suggest putting restrictions on the freedom of the academic community. But it remains the collective responsibility of the three units put together to see that whereas they may enjoy reasonable amount of freedom, the very purpose of the establishment is not defeated. There is a tendency generally to hold the Chief Executive (Vice-Chancellor) responsible for whatever happens on the campus and he is supposed to carry panacea or a magic rod to solve problems. That is just not possible. An insider or an outsider, he is in the campus in the capacity for a very limited period. For him maintaining of peace and law and order in the campus to ensure at least the "normal" functioning is the main objective and it is for the University Community to strive towards the ultimate goal—excellence in teaching and research. It may be worthwhile, therefore, to examine the problems of the University administration by looking at the problems of students, the teachers and the non-academic staff and the role of the Vice-Chancellor as the chief executive. The possible solutions shall also be suggested along side.

Each of the three segments of the campus administration can have problems which is for the Chief Executive to look into and find a solution through collective wisdom. There are two types of problems, of general nature affecting the entire segment and of individual or group discomfort and discontent. While it is easy to handle the former, it is in fact the latter which is difficult to identify and resolve. In most of the cases it is hidden and the concerned individuals feel shy in putting it up openly because of a number of reasons.

They themselves are not convinced of the genuineness of the demand. There is the danger of exposure—their identification with particular demand which if not met may adversely affect their leadership value and attract disciplinary action. The possibility of conflict with or opposition by another group of individuals is also not ruled out. And therefore, an attempt is made to generalise the issue, to confuse people in order to seek broader participation. In the process the issues are mixed up to the extent that the original demand or the cause is lost and confrontation with the Chief Executive becomes the main purpose. Once a particular head of Institution is out, it is celebrated as a victory and the so-called leaders start looking towards the new incumbent with hope or despair. Another advantage of such type of situation is either the limited objective of narrow selfish demands is met or these people reserve their right to hot up the situation—this time with previous experience. Little do they realise that the Chief Executive is not the administration—he in any case has a limited tenure—what if it is further cut short by a few months or years but the harm which is caused to the institution or in fact to its very purpose is immense.

To identify some of the 'General' as well as hidden problems before the University Administration, it shall be better if these are discussed segment wise.

THE STUDENTS

The students, even though they may have very little role in the Administration, they are the most important link first because of their numbers and secondly because of their amenability to exploitation due to inexperience and immaturity: The students' problems in the 'general'

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category relate to the following four areas:

(a) Admission
(b) Study and classes
(c) Examinations
(d) Residence or other related facilities in case of non-residents.

Admissions

At the entry point a student is hardly involved in any thing and he enters the campus with promise, hope and enthusiasm. Old students have natural concern about the new entrants or the admission policy. The admissions on merit based criteria leave hardly any scope for discussion or discontent.

Study and Classes

Classes are held in time, teachers are available for consultation and guidance, facilities are available for books in the library and equipment in the laboratories and the general atmosphere is conducive to study is or should be another concern of student community.

More than the Chief Executive, the other two segments of the University Administration, particularly the teachers have to ensure the fulfilment of the above demand. The Chief Executive has to secure grants and provide funds for updating the library and to modernize the laboratories. It is also his responsibility to provide an atmosphere conducive to study. Others should cooperate when he is required to take certain harsh decisions to ensure this. To raise additional funds, enhancement of fee may sometimes be necessitated. This can lead to resentment and an issue can be made, for reduction of fees. It may, however, be added that in these days of escalation of prices, no one is ever seriously worried about the marginal increase in fees. And all these demands can be resolved through negotiations and efforts.

Examination

A student has stakes in the examination. It is culminating point of his stay and hardwork. He has a future ahead and if the examination or the declaration of results is delayed, it is bound to affect his future prospects. There are non-serious students who are either short of attendance or have no preparation seeking postponement of the examination. Whereas the teachers and the non-academic staff have to ensure examination and declaration of results in time, the Chief Executive by the sheer logic of the number of students involved has to resist pressure of postponement of examination. And so, if all the three segments of the administration are determined, there should not be any difficulty in meeting this very genuine demand of the students.

Residence or Other Related Facilities

There are residential and non-residential Universities. The students who stay on the campus are to be provided with neat and clean accommodation, hygienic food and recreation facilities. In case there is congestion due to over population, additional hostel accommodation is to be made available. That is the responsibility of the Chief Executive. The management of accommodation, food and other activities is however, again in the hands of the teachers or students themselves. Cleanliness and auxiliary services are to be rendered by non-academic staff. Through the collective effort of the Administration again, these problems can be taken care of. In case of non-residents the demand can relate to the hike in bus fare. While this is outside the jurisdiction of the University Administration, the Chief Executive can help in negotiating with the Government or private agencies to ensure concessional facilities for students. And so it is seen that through the student teachers non-academic staff participation, most of the above problems can be resolved without much difficulty. The students should have their share in the administration and full freedom to raise the issues of the general concern. That incidentally, also takes care of another area of students' demands—student participation in administration.

The difficulty, however, arises only in cases of the hidden agenda. To identify some of the issues which are part of the hidden agenda (and only some of these can be identified) the demands relate to the withdrawal of disciplinary action, admission policy on considerations other than merit, overstayal of certain student leaders no longer interested in studies, the police entry in the campus and the level of students' participation or representation; beside the narrow selfish demands of certain student leaders.

A word about the possible solutions.

Disciplinary action for any university administration is not a pleasant thing. It is in fact axing the branch of the tree the one is sitting on. But sometimes it becomes necessary, if the tree itself is to be saved of the spreading disease. Once a branch is axed, can it ever be put back to its place. Any attempt at that would be superficial and harmful to the health of the tree. Disciplinary action should, however be taken with extreme caution and after proper enquiry. It should be initiated only against those who are no longer interested in studies but are staying on the campus with the sole objective of disturbing the peace, with an eye on political career or are using the campus as a safe place for their undesirable activities outside. The demand for revocation of the disciplinary action emanate only from those who subsequently lose interest in study or act at the behest of the instigators outside. They can include the teachers, the non-academic staff and the former students who have been misfits in the society outside. It's only by firm action and again with the cooperation of students, teachers and non-academic staff that such demands are brushed aside.

Any admission policy other than on considerations of merit is suicidal for the university. Exception can always be the rule and fatal to the rules. This problem arises when certain leaders or their likely supporters, children or the wards of the University staff and children of influential people outside are not able to secure entry. This demand can assume any shape. Allegations to arouse public opinion can be in the form of weightage or otherwise to particular religion/caste or the region. It becomes the easiest and the most dangerous stick to beat the administration in a sensitive society like India. The solution is full and complete adherence to the merit based admission policy. Any understanding between the teachers, the students and the non-academic staff on the admission issue can at best be only a very temporary and risky proposition.

Students are normally expected to stay in the campus for the duration of the course that they are admitted to or for the qualifications which may entitle them to enter life. The problem of overstayal arises in the case of failures, in the case of those who are not clear about their objective in life and in the case of those who want to use the campus as a spring board to political career. As has already been discussed, due to the increase in the student population over the years, the hostels are overcongested. The options before the University administration are:

(1) To construct additional building which cannot be done in a short while and which in any case would not resolve this problem.

(2) To deny admission to meritorious fresh students.

(3) To remove from the hostels those who have overstayed.

The university administration should therefore evolve a clear and well defined policy about the failures and about the period of stay by students on the campus. The criteria of relevance of study of various courses should also be evolved. Doctoral and post-doctoral students should be asked to make their own staying arrangements and assured a hostel seat only after the completion of one year of registration and consequent on showing the progress made during the period. That would considerably reduce their number and would incidentally be also a disincentive to mass registration for doctoral degree. Suitable action can always be taken against those using the campus for political or other undesirable activities. There has to be, however, a well defined and uniform policy.

The voice against the police entry in the campus is reminiscent of the value system in education which regarded educational institutions as sacred as temples or religious places. Even today, if all in the university get lost in the fulfilment of the objective of university administration i.e. excellence in teaching and research, police may not be necessary. The world has, however, changed. The presence of the police acts as a deterrent to outsiders and mischief makers and is generally only to ensure an atmosphere conducive to study and research.

Another of the hidden demands on which the student community is sensitive and can be easily aroused is student representation and level of their participation in the administration. One can hardly deny the importance of providing a forum to the students where they can formulate or express their views. They are as much a part of the university administration as the teachers or the non-academic staff. It is imperative that norms should be evolved for student representation and participation in academic bodies. The leader is looked for inspiration and only those who have shown results should be allowed to participate in the determination of the fate of less luckier ones. The unfortunate aspect however, is that this has become only an issue to whip up agitation. The student unions have generally failed in their task of caring for the academic grievances of their members and are dominated by non-serious students and toughs. What in fact is needed is that some norms should be evolved for the election and functioning of the students' unions.

THE TEACHERS

The educated who have chosen for themselves the noblest of all professions, represent the elite in the university administration. If they get determined, can any administration in a university ever fail ? It is from this section that, directly or mostly indirectly, problems emanate.

A brief look at the malaise. Right from the entry, there is no age bar to enter the profession. Whatever may have been the field or the past area of operation, a person even at the age nearing retirement can get into the job—maximum after the requirement of doctorate degree. He uses all his past experience to settle down and obtain his promotion quota. Even among the young postgraduates, those who have stayed in the campus for better part of their life and are no longer young in the process of obtaining the doctorate degree, find it risky and inconvenient to move out which results in large scale inbreeding in appointments. There are pulls and pressures. The opportunities are limited. The struggle intense. The result is most of the colleges and universities in India become den of narrow and limited politics. The struggle for a job and subsequently for a promotion adversely effects the entire personality and the brighter among the contestants who cannot compete in bringing pressure or politicking recede into the background. It has a dual adverse effect. The teacher is an ideal to his students. If such is the ideal, one may have to seriously think about the future of up-coming generations. Secondly, such a teacher instead of concentrating on revision of syllabi or improving the quality of his teaching, is more busy in building up of his own image and strengthen his group. The students are lured to serve these objectives with inflated marks and with a promise of a job. Nothing is more attractive for an average student than to get a degree without having to put in serious amount of work. However, the degree thus obtained makes him eligible for a job only in one's own institution and at least some of the students have no option but to get in queue and become further dependent on teacher-politician for a job. And finally, a few of them devoid of all values do ultimately succeed and get into the teacher's job. The vicious circle goes on. What better role could then be expected of such teachers. This is the main problem *vis-a-vis* the teacher's role in the university administration.

The situation is not beyond retrieve and steps could still be taken to ensure a better and positive role by the vast majority of teachers. That shall be examined, after looking into the nature of the problems of teachers. The 'general' problems of the teachers normally relate to better pay and service conditions, the housing facilities and the medical care. Looking at the present pay scales, the teachers are among the well paid classes and revision of pay is a continuous process. With regard to the service conditions, the teachers enjoy maximum number of non-working days taking into account, the summer and the winter breaks and the period preceding the admission and the examination. The total freedom and absence of any confidential records are the privileges of the teaching community. The housing problem and the problem of medical care are genuine and need to be sorted out with mutual cooperation and consistent efforts by the university administration.

As for the 'hidden' problems, there are as many as if not the number of teachers, the number of groups among them, in an educational institution. Any Chief Executive who makes an effort to ensure minimum academic standard is thrown out. The issues are deliberately mixed up and the innocent students are used to serve narrow selfish interests of the teachers. This has been discussed in the preceding pages. And so it is time a possible solution is looked for.

Admissions to postgraduate courses including the doctorate should be limited, on the basis of an open widely advertised competitive admission test. Revision of syllabi at the postgraduate level be undertaken with the help of specially constituted visiting committees of experts who may be required to visit various institutions to help in the task. There should be a national level test for the award of all scholarships and fellowships. A minimum and maximum age limit be fixed up for entry to the teaching profession. A permanent Union Higher Education Service Commission on the pattern of Union Public Service Commission should be established and made responsible for the recruitment of teachers all over the country. A competitive examination should precede interviews. It is for the teaching profession more than the civil service that the knowledge of an applicant in the subject be further tested. There should be one running grade for all teachers but the present classification of teachers into different cadres may continue. Higher designations may be given to teachers having put in a minimum number of years of service in one cadre on the basis of their academic and research achievements to be evaluated by a committee of experts constituted by the Union Higher Education Service Commission in respect of every subject. The job of teachers be made transferable. All politics in educational institutions shall cease and it shall have great salutory effect on discipline among the students. Also it may help in exchange of teachers between academically sound educational institutions and the less luckier ones. The university administration should work out details of various housing schemes and provide facilities for medical reimbursement.

NON-ACADEMIC STAFF

The term non-academic staff is used in a broader sense to include from the Vice-Chancellor to his office attendant. The Vice-Chancellor who is the Chief Executive, has also his own problems, other than the University problems. His normal 'general' interest is to strive towards achievement of objectives of the university administration, viz., excellence in teaching and research and maintain peace in the campus. They too however have hidden interests—to build up an image of a 'popular' Chief Executive and to secure a better job at the hands of the Government. With the Chief Executive trying to please everyone, the administration in the Universities has sometimes totally collapsed. The possible solution is with all his likes and dislikes, the Chief Executive should not be a local person and he should be an inservice man posted as the Vice-Chancellor just like any of his other postings.

The problems of other non-academic staff are more or less similar to those of the teaching staff, except that some of them having at par qualifications with teachers are more frustrated. While they feel they are the real administration in the old conventional sense, they find no real power in the policy making. This makes them act with a vengeance to create problems in the normal functioning. With limited opportunities for the 'hidden' interests to operate, they are subjected to better administrative control. This adds up to frustration and makes them non-working and misinterpreters of rules. What is required as a possible solution is due share to them in all the academic and executive policy-making bodies, create among them a sense of participation and involvement, check discontent and isolate the mischief makers. That necessitates again a reference to the Chief Executive. Even though the university administration consists of the students, the teachers and the non-academic staff it is the Chief Executive who has to act as a friend, philosopher and a guide. Once having been set on rails, the university administration would definitely fulfil its purpose and accomplish the defined objectives of excellence in teaching and research. □

Birla Institute of Technology and Science

Pilani (Rajasthan) 333 031

Faculty Recruitment Advertisement No. FR/1/87

Applications are invited for faculty positions at various levels in the disciplines of : chemical, civil, electrical & electronics and mechanical engineering; computer science, instrumentation, pharmacy, management; biosciences, chemistry, economics, mathematics, physics; science & technology development, museum studies, engineering technology and English. Candidates must possess normally a Ph.D. However in case of professional disciplines master's or bachelor's degree holders will also be considered. Necessary details are available in a free booklet entitled "Introducing BITS to Prospective Faculty, 1986 which can be obtained on request by sending a stamped (Rs. 5.00) self-addressed envelope (30 x 25 cm) marked FR/1/87. Those who have already applied against Advt. FR/1/87 issued in May 87 need not apply again.

November 1987

A.N. Bhargava
REGISTRAR

AIU Marches Ahead

1982-87

An objective assessment of the role performance of the AIU during the quinquennial of 1982-87 reveals commendable success from several scores. The system of delivery of most of the services rendered by AIU to the universities and institutions of higher education has been duly strengthened and vitalized. Moreover, in order to keep pace with the changing and growing requirements of the tertiary level institutions, new dimensions to many of the activities have been added. This is amply revealed by (i) 400 per cent increase in AIU budget from Rs. 25 lakhs in 1982 to Rs. 100 lakhs in 1987; (ii) 50 per cent addition of new universities to the fraternity of AIU's member institutions; and (iii) 100 per cent increase in staff of the secretariat.

Moreover, in certain spheres, unprecedented achievements have been recorded during the above period. For instance, the dream of having a permanent secretariat which spanned nearly six decades was realised in the same period. Such successes, as realization of AIU House and expansion and diversification of different activities tempt us to record the major achievements. In the following report, it is proposed to give a brief account of the progress made in the last five years in respect of major activities like equivalence of foreign degrees, coordination of International and Inter-varsity sports and cultural programmes, promotion of research in the areas of university education and holding national and international conferences/seminars on subjects of topical interest, publication of documents and research reports and documentation services.

At the outset, it is worthwhile to mention that membership of the AIU grew from 116 in 1982 to 173 in 1987 i.e. an increase by 50 per cent. In other words, almost every month a university joined the AIU's fraternity which not only justifies the role and functions that are currently carried out by the Association for nurturing and vitalizing higher education in the country but also strengthen our faith in collective approach to tackle the common problems of education in our diverse society and that within the framework of federal set-up and democratic polity. As a result of increase in the scale of activities and diversification of programmes, the budgetary position of AIU improved considerably. As against the budget of Rs. 26 lakhs in 1981-82, the budget in 1986-87 rose to Rs. 99 lakhs after an initial rise of Rs. 10 lakhs in 1985-86. It is certain that the tempo of growth in AIU activities would continue in the foreseeable future too. The increased work load on account of expansion and diversification of the Association functions, are managed merely by double the staff in 1987 as compared to the year 1982, even though the AIU activities have increased manifold. Some of the note-worthy activities and achievements thereof during the quinquennial 1982-1987 are as follows :

Equivalence of Foreign Qualifications

AIU being an accredited body at the national level has been vested with the responsibility of determination of equivalence of certificates, diplomas and degrees obtained from India and abroad. AIU continued vigorously to extend its services to an increasingly large number of Indian and foreign students who sought help in regard to the equivalence of their credentials. By bringing out the publication of Equivalence of Foreign Degrees in 1987, a significant contribution has undoubtedly been made as this document would be of considerable help to the universities and employers in India and abroad in evaluating the credentials of the students for employment and admission purposes. In its attempt to disseminate information pertaining to the availability of different courses of studies in Indian Universities, eligibility and admission criteria and other information required by the parents, teachers and students, efforts were made to compile relevant materials that facilitated the publications of such important documents as Universities Handbook, Handbook of Medical Education, Handbook of Engineering Education, Handbook of Agricultural Education and Handbook of Distance Education. Moreover, international bodies like Association of Commonwealth Universities were provided with requisite feedback for generating educational information across the different countries. Furthermore, different national bodies like UPSC, IITs, Ministry of External Affairs, Ministry of Human Resource Development were provided assistance by way of AIU representation on the proper committees in regard to assessment of educational qualifications of the students who compete for jobs, admissions and scholarships, etc.

It has been planned to provide suitable facilities for the foreign students. In collaboration with the Ministry of External Affairs, the Association is actively involved in the planning for construction of International hostels for students from abroad.

A separate unit is being set up to provide information and help foreign students who intend to join universities or colleges in India. The Ministry of Human Resource Development has transferred its Student Information Unit to the Association. The information and credential evaluation services for the international students are proposed to be strengthened. This is in no way insignificant achievement.

Sports

The Association conducts sports programme among universities' students. Sports in Indian Universities are considered as an integral part of general education. AIU has endeavoured to play a significant role in making this concept of sports a reality by organising competitive sports as well as training programmes. The Inter-University Tournaments in as many as 23 games are presently conducted by the AIU every year, involving about 30,000 sportsmen/women from all the member universities and technical institutions. AIU is now organising on regular basis as many as 80 university level Coaching Camps in selected disciplines—Athletics, Badminton, Basketball, Volleyball, Football, Hockey and Wrestling. The idea behind introducing this programme is to keep the university sports talent busy during the part of the year when they tend to be slack.

Other areas covered by the AIU for managing the sports programmes are : Selection and training of Indian Universities' Teams for participation in National and International Tournaments; exchange of visits between Indian Universities Teams and the University Teams from abroad; working as a coordinating agency between the member universities to have a liaison with the Department of Sports, Govt. of India, National Institute of Sports, Sports Authority of India and National Sports Federations. AIU has the exclusive authority to coordinate sports events and to identify and nurture sports talents in the universities. Participation of Indian Universities teams has over the years increased considerably both at national and international levels. Due to increase in the scale of sports activities, AIU's income on account of sports has doubled over the last five years.

In May 1987, a National Seminar on Physical Fitness and Standards in Sports was organised at Udaipur, with a view to sensitizing the university community for launching sports activities in a vigorous way. Every effort is being made to spread the culture of Sportsmenship among the youth who are the torch bearer of the present society.

Finally, it is worthwhile to mention that a number of innovative schemes have been conceived for the promotion of sports in the universities. To mention a few, proposals have been submitted to the Department of Youth Affairs and Sports for organising SAARC University Games in Delhi in November 1989. Further, it has been planned to introduce Prize Money Scheme for award to universities and colleges which are winners and runners up in Inter-University Tournaments in selected sports items. Such incentives as above would encourage sports activities and enhance standards of sports in member institutions.

Culture

The promotion of national unity, amity and integration through cultural activities has been one of the prime objectives of our National Education Policy. A significant stride was made in this direction by adding a new activity to the list of services which AIU extends to the university community.

In 1985, which coincides with Diamond Jubilee Celebrations, AIU undertook the responsibility of organizing Inter-University Youth Festivals annually at different university centres on zonal and national levels. The programme of the Festivals comprise cultural events like Music, Dance, Theatre, Literary Activities and Fine Arts. In collaboration with the Department of Youth Affairs & Sports, Govt. of India, the Association organized a series of Inter-University Youth Festivals which subsequently led to organization of historic NAM Cultural Youth Festival (NAMYFEST) 1985. The festival emerged out to be with remarkable success.

It is a matter of national pride that 108 university youths from different universities participated in the Festival of India in USSR during July-September 1987. The youths were selected from the Inter-University Youth Festivals organized during 1986-87.

In 1987-88 it has been decided to launch a series of Inter-University Youth Festivals and the North Zone Festival, the first in the series starts at Aligarh Muslim University on November 21, 1987. These Youth Festivals will coincide with the Festival of USSR in India inviting youth from USSR who will also join the Zonal Youth Festivals. Soviet youth would participate in the Youth Cultural Programmes to be hosted by five universities.

In addition, AIU sponsored 50

University Choirs and Orchestras during 1986-87 by providing financial assistance of Rs. 15,000/- and Rs. 10,000/- respectively. The target for the session 1987-88 has been doubled to 100 University Choirs and Orchestras. The scheme has been launched to achieve national integration through the medium of music and by bringing together university youth belonging to different regions, languages, castes, creeds and ethnic groups. These activities would surely promote understanding and a sense of well being among all the sections of the society.

Lastly, it is important to note that the allocation of resources for cultural activities has risen to Rs. 24.50 lakhs in 1987-88 as against Rs. 14.95 lakhs in 1986-87. There is thus every reason to believe that cultural activities in the university sector would be boosted up considerably in the times to come.

Research Cell

The Association carries out indepth research related to two broad areas of higher education i.e. Reform of Examination System and Economics of Education.

The Examination Unit of the Research Cell has brought out several monographs on different aspects of examinations. More than 20 volumes in the Question Bank Series have also been published. Efforts are being made to translate the Question Banks into Hindi.

Computerization of Examination System has been the major thrust area in the recent past. The unit organised national training workshops on computerisation and Management for Resistrars and Controllers of Examinations in 1986. Moreover, the software packages in the areas of statistical methods, payroll, budget and inventory controls have been developed for the use of the staff of the Research Cell as well as member universities. Besides these, correspondence courses on Evaluation Methodology and Examinations are being conducted on regular basis at the Basic, Intermediate and Special Professional levels at different University centres.

The Economics of Education Unit carries out in-depth empirical and investigative research on economic aspects of education. It has vigorously continued to carry out the three broad programmes: I—Research; II—Development of Research Resources; and III—Conduct of Seminars/Conferences. Under the Research Programme, the Unit has a large number of publications to its credit. Some of the recent publications are : State Funding of Universities, New Education Policy : AIU Recommendations on Higher Education, Education and Economic Development : Perspective for Policy Planning, Studies in Distance Education. Besides this, the following studies are in progress: Financing of Higher Education; Economics of Correspondence Education; Graduate Unemployment in India and Higher Education in 2000 A.D. :A Long-Term Perspective.

Under the programme of Development of Research Resources, relevant data on University Education are compiled. University Finance (Vols. I and II) have already been brought out. Attempts are made on regular basis to improve the data base pertaining to the system of higher education in India. An overall assessment of the performance of the Economics of Education Unit has been commendable. It has been planned to strengthen the research programmes in the future.

In order to exchange views on educational policy planning and development, Seminars/Conferences are organised every year to deliberate upon a theme of topical interest. To mention a few, in 1985, an International Conference on New Educational Technologies in Higher Education was organised. In 1986, a National Conference on Distance Education was organised. In the current year, it has been planned to hold a National Conference on Role of Universities, in Implementation of New Education Policy to be held in December

AIU Marches Ahead
HIGHLIGHTS

		1982-83	1986-87
	Membership	116	173
	Income (in lakhs)		
(i)	Sports	8.39	27.97
(ii)	Research	7.68	16.57
(iii)	Culture	—	14.95
(iv)	ATU Maintenance Activities	13.13	33.28
	Staff (members)	54	110

1987. The recommendations of the Seminars/Conferences are submitted to the Government bodies for their considerations to bring about modifications in the existing policies and programmes so as to accelerate the pace of educational development. In addition to foregoing research contributions, the Unit assists various task forces and study groups. The Unit ably provided help to study groups on New Education Policy, Education in Human Values, Educational Tribunal, etc. As a token of recognition good performance and valuable services that are rendered by the Research Cell, the Department of Education, Ministry of Human Resource Development has given the permanent status as it is being treated under non-Plan scheme since 1985-86.

Training

Moreover, with the rapid increase in the frontiers of knowledge in every field of university activity, it is necessary that university administrators are provided adequate opportunities to update their professional skills and knowledge and acquaint themselves with the latest technique of human resource development and concepts of modern management. The AIU has therefore launched since 1987 training programmes and orientation courses for administrators of different categories of National, Zonal and Local levels. In the current year four training programmes were organised at different university centres, which emerged out to be with considerable success.

Library and Documentation

In furtherance of the objectives of the Association to act as a bureau of information and a service agency to universities, it maintains a specialised library of books, documents and periodicals on higher education. During the last five years a large number of books and journals pertaining to higher education have been added to the stock of library. The collection pertains especially to Educational Sociology, Educational Planning, Educational Administration, Teaching and Teachers Training, Examination, Economics of Education, Country Studies, Adult Education, Continuing Education, Distance Education and Educational Technology. The addition of new books on different topics to the AIU Library has been at unprecedented high rate. In 1983 the number of additional books was 494 which included 312 purchased while 182 as gratis. In 1984 the number of additional books was 783, out of which 345 were received on complimentary basis. In 1985 the number of additional books was 630 out of which 441 were purchased. In 1986, 640 books were added to the library, of which 324 were purchased and rest received on complimentary basis.

Furthermore, in 1983, 70 periodicals were subscribed while 34 were received on complimentary basis. The number of periodicals and journals being received currently are 108 and 26 respectively.

The library has also been actively involved in the activities of Inter-Library Resource Centre of ICSSR and thus it provides Inter-Library Loan facility to teachers and students. The number of readers visiting the library in the last five years shows a remarkable improvement which is attributable to the quality in service rendered by the library staff.

The publication of the Bibliography of Doctoral Dissertations and Natural and Applied Sciences and also in the Social Sciences and Humanities for each year has been a regular feature of the library which helps in maintaining a complete catalogue of the research output. Documentation of Articles from issues of different journals has also been a regular activity of the AIU library since 1984. Beside this, in the recent years, the library has supplied such information to University News as on 'Theses of the Month'. 'Research in progress', 'Additions to AIU Library' etc. with a view to disseminating information to the researchers.

Since 1986, library maintains press clippings of Articles and other relevant publications in the sphere of higher education.

Readers to the AIU library have been attracted due to the complete renovation of the library. In order to provide necessary comfort to the readers, additional stacks have been provided since the year 1985. A photocopy facility has also been made available since 1986. It can thus be said that the library is better equipped now than before in serving researchers and teachers.

Publications

The AIU has a regular programme of such publications as are conducive for sharing information pertaining to higher education among the university level institutions. The publications are well received by the academics, institutions, students and general public in the country and abroad. Following are the number of publications brought out during the last five years :

Year	New Titles	Reprinted Series	Total
1982	8	13	21
1983	8	12	20
1984	4	1	5
1985	5	8	13
1986	9	9	18
1987	8	1	9
Total	42	44	86

These however do not include the unpriced documents that were published at different occasions during the period. It is heartening to note that income from sales of publications rose to Rs. 7.35 lakhs in 1986-87 as against Rs. 4.12 lakhs in 1982-83, which in itself indicates commercial viability of AIU's publications.

University News

An important innovation was introduced in 1984 when the University News was converted into a weekly owing mainly to its popularity and extensive services that it catered for. The Journal is subscribed by the academics and researchers and educational institutions in the country. Almost all the educational institutions, research organisations are making use of the Journal for the advertisement of admissions to different courses of study and for filling up vacant posts of academic and non-academic staff. Thus, the Journal provides placement services to the academic community. It is planned to widen the scope and coverage of the Journal in the future.

The income from subscriptions of University News has improved substantially i.e. Rs. 0.96 lakhs in 1986-87 as against 0.32 lakhs in 1982-83. In addition to this, the income from advertisements that were carried in the University News rose from 1.34 lakhs in 1982-83 to Rs. 4.30 lakhs in 1986-87. By any reckoning, these income figures are indicative of a good performance of the Sales and Publications of AIU's reports and documents.

AIU Budget

The tasks enumerated in the foregoing paragraphs would not have been completed had there been no concerted efforts to mobilise additional resources from various sources. AIU income rose to Rs.98.91 lakhs in 1986-87 as aganist Rs. 29.13 in 1982-83. The expenditure pattern has closely followed the trend in income. It is imperative to point out that for financing AIU's programmes, reliance on the fees received from the member institutions has been declining. For supporting programmes related to sports and culture and Research, AIU has been able to compete for funds from Government and non-Government sources. As has been indicated elsewhere in this report, income for the above activities has increased substantially owing mainly to resource mobilization efforts of AIU. Furthermore, as a result of efficient management of resources, budgetary position of AIU remained sound throughout the period under report. It is indeed a significant achievement in the era of budgetary deficits experienced by most of the educational institutions in the country.

AIU House

The completion of the AIU House and all its facilities is a landmark in the history of the Association. It is a proud example of sharing of the collective responsibility of building a home for the Association, where a variety of services are available to the members. With the help of the Central and the State Governments and a large number of member universities, the AIU House has been practically completed.

With the coming up of AIU House, a long felt need for its own building and strong infrastructure has been fulfilled. It would be no exaggeration to say that in future the University system would derive increasing benefits from the permanent complex which offers services in respect of research resource centre, committee and seminar rooms, convenient facilities for the visiting Vice-Chancellors and the academic community. The AIU hopes to enlarge, strengthen and modernise its activities in serving the universities better. Besides, it proposes to undertake new activities to be more useful to the member universities in the years to come. ☐

Contributed by : Research Cell,
AIU

Recent Publications

1. Handbook of Medical Education-1987	: Rs.	45.00
2. Monograph on Sample Free Item Analysis	: Rs.	50.00
3. Bibliography of Doctoral Dissertations in Social Sciences & Humanities 1983-84	: Rs.	180.00
4. Educational Statistics at a Glance	: Rs.	75.00
5. Education and Economic Development	: Rs.	25.00

Address Enquiries to :
Under Secretary (Publications)
ASSOCIATION OF INDIAN UNIVERSITIES
AIU House, 16 Kotla Marg,
New Delhi-110002

Telephones : **3310059, 3312305, 3312429 and 3313390**
Telex : **31 5578 AIU IN** *Gram :* **ASINDU**

Foreign Students' Advisers Meet

The Indian Council for Cultural Relations (ICCR) recently convened a meeting of the Foreign Students' Advisors (FSAs) in Indian Universities. Shri P.L. Sinai, Chairman of the Inter-Ministerial Standing Committee on Foreign Students in the Ministry of External Affairs presided.

Shri Lalit Mansingh, Director General, ICCR welcomed the participants and apprised them of the implementation of the decisions taken at the last meeting held in 1986. The Cabinet had since approved a number of measures to upgrade and streamline facilities for foreign students. The Council, a nodal agency for the welfare of the foreign students, has extended the scope of its facilities to cover new areas like study tours, seminars, cultural activities, creation of regional offices, etc. He suggested that 11th November, the birthday of Maulana Abul Kalam Azad be observed every year as Foreign Students Day for which the Council will release necessary financial assistance. Shri Lalit Mansingh sought active participation of FSAs in the welfare activities of international students so that they carry a message of goodwill when they return to their country.

Shri P.L. Sinai emphasised the vital role of the FSAs in the welfare of international students. He listed various measures that have been approved by the Cabinet during the last year including raise in scholarship and allowances for books, clothing and vacation and streamlining of procedures for issue of Visa, language orientation, disbursement of scholarship amount. The scholarship holders are proposed to be provided free hostel accommodation or subsidy. A series of inter-ministerial meetings were held involving Ministries of External Affairs, Human Resource Development, Finance, and ICCR, University Grants Commission, Youth Hostels Association of India, Association of Indian Universities and others to implement the suggestions made at the last meeting. A Sub-Group on hostel accommodation for international students was set up to suggest a long term solution. A Sub-Committee of the Ministry of Human Resource Development suggested measures to quicken the process of selection and placement of international students under various scholarships schemes. A Standing Committee on Foreign Students has been constituted in the Ministry of External Affairs to consider various issues from time to time. Shri Sinai hoped that these steps will go a long way in improving the facilities for international students. He sought the opinion of the FSAs on issues like orientation, English language courses, renting of private accommodation, health care, larger participation in cultural activities, study tours, matters of equivalence, information literature, etc. He emphasised that local voluntary agencies should be involved in organisation of Indian cultural programmes. Shri Sinai said that the government was keen to improve facilities for international students who should go back to their country as friends of India.

Earlier, Shri B. Shetty, Dy. Director General of ICCR presented a background note on the steps taken for improvement of facilities for foreign students.

Shri H.K. Saxena, Chairman, of the Youth Hostels Association of India briefly described the facilities available at the youth hostels all over the country. The facilities could be availed of by all the international students either on their study tours or private visits. Shri Saxena said that the period of stay at Youth Hostel has now been extended for the benefit of foreign students and others.

Shri K.C. Kalra, Deputy Secretary, Association of Indian Universities, apprised the meeting of the extensive literature produced by the Association on the university system in the country. This, he felt, could be useful to the foreign students. The book on "Equivalence of Foreign Degrees" has been added to the series of Handbooks. He pointed out that equivalence services have been strengthened to provide additional information. The Student Information Service (SIS) Unit of the Ministry of Human Resource Development has now been transferred to AIU which would welcome enquiries from foreign students who intend to join Indian Universities. The Association has compiled data on foreign students studying at various universities in the country; this is being made an annual feature.

The meeting recommended adequate provision of secretarial services to the FSAs who were requested to maintain details on academic, language, legal problems and health care of international students. Guidelines for expenditure statements of students were to be prepared keeping in view the local requirements. An information brochure/booklet for reference of foreign students giving details on courses, eligibility, etc. may be prepared as early as possible. The foreign students should be exposed to Indian Culture. Accommodation was considered a major area of difficulty for which the universities may consider construction of additional hostels with matching grant from the University Grants Commission/State Government.

The meeting was attended, among others, by Foreign Students Advisors, representatives of the Ministries of External Affairs, Human Resource Development (Education), Finance, Youth Hostels Association of India, Association of Indian Universities, and Education Consultants. ☐

Value-Orientation in Higher Education

Sri Sathya Sai Institute of Higher Learning recently organised a National Symposium on Value-Orientation in Higher Education. Sponsored by the University Grants Commission (UGC) and the Association of Indian Universities (AIU), the symposium was inaugurated by the Chancellor of the Institute, Bhagavan Sri Sathya Sai Baba. Vice-Chancellors, eminent educationists and scientists from different parts of the country participated in the deliberations of the 3-day symposium which were conducted in four working sessions. These sessions discussed in depth the position paper, "Education in Human Values—Its Implementation, presented by Sri Sathya Sai Institute of Higher Learning.

In his inaugural address, the Chancellor referred to human life as a very sacred and precious thing, which has to be used for the good of the individual and the welfare of the society. Elaborating the fundamental essence of five basic human values, he clarified that the trinity of body, mind and atma constituted Constant Integrated Awareness. Referring to the trinity of Head, Heart, and Hand, he observed that what the head (mind) thinks, should be examined critically by the heart and the right decisions arrived at should be carried out by the hand. This triune process described in Vedanta as "Trikarnasuddhi"—is the purity and harmony of thought, speech and action.

He made pointed reference to the fact that human values cannot be learnt by studying books and by listening to lectures. These have to be cultivated by individuals by constant practice. Cultivation of humility is the first step. Pointing out the royal way to immortality, he said : "Bend the body; Mend the senses and End the mind. This is the key to immortality". The promotion of human values must become an integral part of the educational process. He felt that to restore the supremacy of values in all fields of education and national life, an association of leading scholars and educationists, which is autonomous and completely independent, should be formed and try to find out the ways and means of promoting value-orientation in higher education.

He observed that there should be no dichotomy between science and spirituality. While the world needs science, science alone cannot create a heaven on earth. We should promote our country's ancient culture and its rich heritage.

Delivering the keynote address, Prof. G. Ram Reddy, President, AIU and Vice-Chancellor of the Indira Gandhi National Open University, expressed his pleasure that the National Symposium was being organised at a very crucial moment in our national life. While the National Policy of Education, 1986 had suggested measures for giving proper value-orientation to education, the Sathya Sai Institute has already given a practical shape to the programme as a result of the experience gained through the successful implementation of programmes of Bal Vikas for children and Education in Human Values at the school stage.

He noted that the Institute laid stress "on five major rubrics which would, in turn, represent a variety of values. They are Truth (Sathya), Right Conduct (Dharma), Peace (Shanti), Love (Prema) and Non-violence (Ahimsa)." He observed : "So far as the individual values are concerned they may vary from society to society, religion to religion. But some values like Sathya, Dharma, Shanti, Prema and Ahimsa should be acceptable to all the people in the country". He fervently appealed that these values have to be promoted as these are the quintessence of all the well-known world scriptures, religions and faiths.

Dr. Jagdish Narain, Secretary, AIU, while presenting the Report of the Symposium, appreciated the sublime atmosphere, beautiful infrastructure and soothing environment which have been created in Prasanthinilayam in a very short period and referred to the provision of a variety of educational, creative and constructive programmes of the Institute, exceptionally conducive to the promotion of human excellence, based on fundamental values. He made the following points in his report :

(1) Pioneering role of the Sri Sathya Sai Institute should be recognised and information about the Institute's programmes should be widely disseminated all over the country.

(2) The Symposium reiterates strongly that the aims and objectives of the programmes of value-orientation in higher education in the Institute are very much in line with the accepted parameters of promotion of human excellence and cherished values, based on secularism and the accepted principles of unity of faiths and religions, all over the world.

(3) The Indian academic world needs to be enlightened on

the pace-setting success story of Sri Sathya Sai Institute of Higher Learning with regard to introduction and efficient implementation of the programme of value-imbued higher education under the programme of "Education in Human Values". There was a need for preparation of a model blueprint for circulation to institutions of Higher Education.

(4) The proposed Academic Staff Training Colleges in universities, being set up with the help of the UGC should incorporate value-imbued education as an integral part of training programme for teachers.

(5) Awareness programmes for General Educational Courses designed by the Institute, have been imaginatively interwoven into the fabric of both undegraduate and postgraduate curricula with emphasis on Indian ethos and cultural development.

(6) The Symposium recommended designing Courses on these lines and making these compulsory in all institutions of higher education.

(7) There has to be well chalked-out programme of value-oriented education right from primary school to institutions of higher learning.

(8) Social Service schemes and youth and student-welfare activities need to be promoted in order to inculcate qualities of leadership, team spirit, discipline and service-mindedness.

(9) It is high time that a self-consistent and universal system of values, which can be regarded as the basis on which syllabi and courses of study can be designed. The Sri Sathya Sai Institute of Higher Learning has a five-fold system of values, which is self-consistent and is able to sustain itself as a workable theory of the human personality. These five values in the system are Truth, Righteous conduct, Peace, Non-violence and Love. These can be adopted and adapted by educational institutions.

(10) The Association of Indian Universities, in view of the prime importance of the subject, should assume this important responsibility and set up a cell to deal with Education in Human Values, which would among other things collect information, materials, documents, audio-visual aids, cassettes, etc. from various sources and disseminate these to all institutions of higher education and hold periodical conferences and seminars to review progress and suggest action programmes.

An exhibition on "The Education in Human Values" was also organised on the occasion. This was inaugurated by Prof. P.V. Salvi, Vice-President AIU and Vice-Chancellor Konkan Krishi Vidyapeeth.

Psychological Testing Cell

Department of Psychology of the Ewing Christian College, Allahabad has to set up a 'Psychological Testing Cell' under a project of the United Board for Higher Education in Asia in 1984. Understanding of individual's personality and selection of personnel for various vocations, based on objective criteria has been greatly facilitated by developments in the field of Psychological Testing. Though application of these tests has become prevalent in selection of personnel for various jobs in private and public sectors, the candidates who appear in these tests have little exposure to such psychological tests. A second and equally important area where psychological testing has been of immense use is in helping an individual to decide about his or her career. Insights developed about one's own aptitude with the help of psychological tests help in selection of a vocation. These tests can also be utilized for understanding of one's own personality, motivation pattern and adjustment problem so that the individual can function more effectively and contribute to the environment of which he is a part. Stated more specifically, 'Psychological Testing Cell' aims at meeting the following main objectives :

(1) To help students in understanding their own aptitude and thereby opting for a suitable career.

(2) To provide an opportunity to them for gaining insight into their own motivation, cognition and other different aspects of personality.

(3) To expose them to the process of psychological testing and make them aware of its applications.

(4) To identify various predictors of academic attainments in the context of present education system, and also suggest suitable modifications in teaching strategies.

To achieve these ends, Psychology Department of Ewing Christian College, Allahabad, under the headship of Dr. A.K. Varma generated keen interest among the college students to appear in such tests. Tests on cognitive abilities, motivation and other personality traits were administered on group of students who opted for it. Dr. Rajeev Sharma and Mr. R.K. Anand with the help of research assistants administer the tests, develop norms and analyse the results. Students are also given profile form indicating their grades on various tests. They were also oriented to the purpose, use and control ability of the outcome of such tests. The data is further analysed by help of computer to establish correlation between students' ability and academic performance, their aptitude and aspiration level etc. Such analysis will also help to plan subject combination in science and humanities and suggest teaching strategies. The department encourages students to develop communication skills, creativity and other personality traits by providing various apportunities to them throughout the year. It has also been extending counselling facilities to the students.

Financial Assistance for International Conferences

The Indian National Science Academy (INSA) has invited applications from scientists for partial financial assistance to participate in some important International Conferences abroad during the year 1988-89. The assistance is available under three different categories, viz., (1) For International Conferences sponsored by the International Council of Scientific Unions (ICSU) and its affiliated bodies (ICSU Conferences); (2) For International Conferences sponsored by other agencies (Non-ICSU Conferences); and (3) For applicants who are interested in partial travel assistance only, for participation in any International Conferences abroad. This is categorised as INSA-COSTED Travel Grant.

Under Category 1, INSA's financial support, in case of selection, is limited to a maximum of 50% International travel, 50% maintenance allowance for the duration of the conference and registration fee, wherever necessary. Scientist who has been invited to deliver a plenary lecture/preside over a session of a scientific conference or whose paper has been accepted for presentation, and who will also be provided maintenance allowance during his/her stay abroad and partial travel expenses by some agency, will be given preference over others.

For Category 2, INSA's financial support, in case of selection, is limited to a maximum of Rs. 5,000/- only and would be available to a scientist who has been invited to deliver a plenary lecture/preside over a session or whose paper has been accepted for presentation and who will also be provided maintenance allowance during his/her stay abroad and partial travel expenses by some agency.

A scientist who is interested to avail partial travel assistance only, for participation in any International Conference and is also below 35 years is eligible for assistance under third category provided he fulfils the following conditions : (a) He/she should hold a Doctorate degree; (b) His/her paper should have been accepted for presentation; and (c) His/her local hospitality and partial travel expenses has to be borne by the organisers or some other agency.

Further details may be had from the Indian National Science Academy, Bahadur Shah Zafar Marg, New Delhi-110002.

News from Agril. Varsities

Training Programme on Citrus Production

The Punjabrao Krishi Vidyapeeth, recently organised a National Level Training Programme on Citrus Fruit Production for the class I and class II officers working under T. & V. in the different states of the country. Sponsored by the Directorate of Extension, Govt. of India, Department of Agriculture and Co-operation, New Delhi, the training programme was intended to motivate the farmers of the different states to undertake citrus cultivation.

Inaugurating the programme Shri Jayantrao Patil, Chairman, Khadi Gramodyog, Maharashtra, referred to the Citrus cultivation in Israel and opined that the technique which was being adopted in that country could show a way to the entire world in general and to our nation in particular. He further pointed out that Citrus cultivation was rather simple but water management and plant protection were very critical aspects; where sense of social responsibility and involvement of community played very important role. He advocated that sprinkle and drip irrigation could prove boon to Citrus cultivation resulting in more produce in minimum quantity of water.

Delegates from Jammu & Kashmir, Himachal Pradesh, Uttar Pradesh, Bihar, Assam, West Bengal, Orissa, Nagaland, Tripura and Maharashtra participated in the 2-week training programme.

USAID Team Visits TNAU

The U. S. Agency for International Development (USAID) team visited the Tamil Nadu Agricultural University, Coimbatore recently to assess the impact of agricultural education on agricultural economics and development in the country. Their study in India was part of their evaluation tour covering nine other developing nations, like Brazil, Indonesia, Morocco, Nigeria, etc.

During their discussion with Dr. V. Rajagopalan, Vice-Chancellor of TNAU and other University Officers, the team members evinced keen interest in knowing about various activities of the University in achieving the goals for the benefit of the society. The team was appraised on how structural changes had responded to the changing needs of the society. To gain a first hand knowledge about teaching, research and extension efforts of the University, the team members in groups visited the various campuses and research stations in the State. Besides, the team members had a fruitful exchange of ideas with the farmers during their field visits. Familiarisation of UG and PG programmes with selected teachers and students also formed a part of the USAID team visit.

Soviet Scientists Visit HAU

A 2-member Soviet delegation consisting of Dr. B.A. Karimov, Head of Division of Immunization Uzbek Veterinary Research Institute, Samarkand, and Dr. V.T. Zamblotsky, Senior Scientist, All Union Research Institute of Experimental Veterinary, Moscow visited the Haryana Agricultural University recently. The visitors studied the research work being done by HAU scientists on prophylaxis and control of theileriosis and blood-parasite in cattle. They expressed their satisfaction at the research thrust in these areas and commended the work done by the HAU veterinarians.

Food Technology and Rural Development

A 2-day national symposium on "Role of Food Technology in Rural Development" was held at the College of Home Science of the Haryana Agricultural University. Inaugurating the symposium, Mr. M.S. Rathi, Vice-Chancellor, said that keeping in view the advances in grain production, the methods of its conservation have

We Congratulate. . .

(1) **Dr. S.B. Kadrekar who has been appointed as Vice-Chancellor of the Konkan Krishi Vidyapith, Dapoli.**

(2) **Prof. Mangal Dubey who has been appointed as Vice-Chancellor of the Magadh University, Bodh Gaya**

(3) **Prof. G.S. Marwaha, former Director, Indian School of Mines and President, AIU, who has been appointed Chairman of the Advance Environment Planning Group constituted by the Government of India in the Department of Coal.**

ASSOCIATION OF INDIAN UNIVERSITIES

AIU HOUSE, 16 KOTLA MARG, NEW DELHI-110002

Applications from Indian citizens are invited for the following posts in the prescribed form available on payment of Rs. 2/- from the office of the Association :

1. ASSISTANTS Pay Scale : Rs. 1400-2600 (Revised)

Graduate with atleast five years experience in Educational Institutions/Govt./Autonomous Organisations. Experience in noting, drafting, maintenance of records and knowledge of typewriting will be preferred.

2. LOWER DIVISION CLERKS Pay Scale : Rs. 950-1500 (Revised)

Higher Secondary with good typing speed. Preference will be given to those having office experience and knowledge of Reception, telephone and telex machine operation.

The posts carry dearness and other allowances generally at the Central Government rates. Total emoluments at the initial of the scale amount to Rs. 2017/- for Assistant and Rs. 1464/- for LDC respectively, including HRA and Special Allowance. Higher start in the prescribed pay scales may be given in deserving cases. Relaxation in any of the requirements may be made in exceptional cases. The Association reserves the right not to fill up the vacancies advertised, if the circumstances so warrant. SC/ST/Ex-servicemen will be given preference. Canvassing in any form by or on behalf of a candidate will be a disqualification.

Applications complete in all respects should reach the Office by 21 December, 1987. Persons already in service should apply through proper channel. Application received after the last date or without complete information will not be entertained.

not kept pace with it. Hence it is imperative on the part of food technologists to identify and transfer the relevant technology that can be used for its conservation otherwise the losses due to the improper storage leading to deterioration in quality will be much more". At present, there seems to be a wide gap between the technology available in the lab and that being applied in the field. Steps to narrow down this gap are essential for cultivation of food technology for happier homes of the rural masses. He further said that adoption of food technology which is simple, less expensive, energy saving and suitable to local environment will certainly improve the living conditions of the farmers. He advised setting up of cluster of processing centres for farm produce in rural areas which can solve some of the problems of rural people.

Prof. B.S. Bhatia, an eminent Food Technologist, presided over the function. In his address, Dr. Bhatia said that the basic food technology should grow from grass root level. He further said that while developing the need based technology in rural areas, the interest of the marginal farmers and the landless labourers should also be kept in mind. He urged the entrepreneurs from rural areas to make conserted efforts at establishment of modern packaging industry.

Over 30 eminent food scientists and technologists from national laboratories, universities and institutes participated in the symposium.

Sports News

Inter-University Tournaments Results

Tournament	Event	Venue & Dates	Position
All India Inter-University Aquatic Championship	(i) Swimming (M)	Calcutta University Oct. 10-14, 1987	1. Delhi University 2. Poona University 3. Gandhiji & Anna Universities
	(ii) Swimming (W)	-do-	1. Madras University 2. Kerala University 3. Poona University
	(iii) Water Polo	-do-	1. Calcutta University 2. Poona University 3. Bombay University
All India Inter-University Hockey (W) Championship	Hockey (W)	Marathwada Univ. Nov. 3, 1987	1. Gandhiji University 2. Panjab University 3. Guru Nanak Dev Univ.
	Football	Gandhiji Univ. Nov. 3, 1987	1. Aligarh University 2. Gandhiji University 3. Calicut University
Inter-University Volleyball (M) Championship	Volleyball (M)	Bhagalpur Univ. Nov. 8, 1987	1. Calicut University 2. Madurai Kamaraj Univ. 3. Allahabad University
All India Inter-University Wrestling Championship	Wrestling	Mysore Univ. Nov. 5-10, 1987	1. HAU 2. Meerut University 3. Guru Nanak Dev Univ.

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Golsefid, Yousef Torabi. *Fluid mechanics.* BHU. Dr. Nawal Kishore.
2. Harishchandra. *Functional analysis.* BHU. Dr. Nand Lal.
3. Mishra, Shashi Kant. *Distribution theory and applications.* BHU. Dr. R.S. Pathak.
4. Rastogi, Archana. *Special functions.* BHU. Dr. I.K. Khanna.
5. Roy, Moon. *Special functions of complex analysis.* BHU. Dr. I.K. Khanna.
6. Singh, Rajendra Pratap. *Some aspects of boundary layer theory.* BHU. Prof. K. Lal.
7. Singh, Suchit Narayan. *Differential geometry of manifold.* BHU. Prof. B.B. Sinha.
8. Srivastava, Deepika. *Special functions.* BHU. Dr. I.K. Khanna.
9. Srivastava, Madhurima. *Special functions.* BHU. Dr. B.D. Agarwal.
10. Vilfred, V. *Labelled graphs satisfying a certain condition on the vertica and regular labelled graphs.* Kerala. Dr. M.I. Jinnah.

Physics

1. Datt, Surjit Singh. *Study of energy dissipation and nuclear deexcitation mechanism via exclusive measurements of neutron multiplicity distribution.* Panjab. Prof. W.U. Schroder and Prof, I.M. Govil.
2. Ghosh, Ashish Kumar. *Maser instability in space plasma.* BHU. Dr. R.P. Singh.
3. Nandagawe, J.K. *Opto-electronic properties of (Zn. Cd)S phosphors.* Shivaji. Dr. R.D. Lawangar-Pawar.
4. Pandey, S.N. *Some studies in nonlinear physics using different theoretical techniques.* Gorakhpur. Dr. S.K. Bose.
5. Saeed Uddin. *Quantum chromodynamics and physics of quark plasma.* BHU. Dr. C.P. Singh.
6. Sangeet Kumar. *Theoretical studies of solar cells.* BHU. Dr. D.P. Singh.
7. Singh, Prabhu Narain. *Plasma physics and its applications.* BHU. Dr. R.P. Singh.
8. Srivastava, Neeraj. *Semiconductor material for solar energy applications.* BHU. Dr. R.P. Singh.

Chemistry

1. Belhekar, A.A. *Conformational and hydrogen bonding behaviour of complex molecules.* Shivaji. Dr. C.I. Jose.

2. Chavan, N.N. *Thermotropic liquid crystals : Cholesteric polyesters.* Shivaji. Dr. S. Ponrathnam.

3. Damanjeet Kaur. *Quenching of fluorescence of aromatic molecules by some haloalkanes.* Panjab. Prof. D.V.S. Jain.

4. Gaikwad, R.R. *Kinetics and mechanism of oxidation of hydrazides.* Shivaji. Dr. A.Y. Nimbalkar.

5. Gupta, Raman. *Synthetic studies in some polynuclear heterocyclics.* Panjab. Prof. H.K. Gakhar.

6. Jadhav, A.S. *Studies in synthesis of polymers using diamines, diacids, diisocyanates and their applications in membranes.* Shivaji. Dr. S.P. Vernekar.

7. Kaith, Balbir Singh. *Photochemical and antiarthritic investigations of Pluchea lanceolata C.B. Clarke.* Panjab. Dr. A.S. Chawla and Prof. S.S. Handa.

8. Londhe, S.B. *Spectrophotometric determination of some metals.* Shivaji. Dr. (Smt.) V.A. Jadhav.

9. Sandhu, Seema. *Solvation studies of electrolytes in dimethylformamide methanol mixtures.* Panjab. Dr. S.P. Jauhar.

10. Sarwade, B.D. *Thermally stable polymers.* Shivaji. Dr. S.S. Mahajan.

11. Sharma, Ashok Kumar. *Phytochemical investigations of some well known antiarthritic plants of Indian origin.* Panjab. Prof. S.S. Handa and Dr. A.S. Chawla.

12. Tiwari, Harish Chandra. *Studies in heterocycles.* BHU. Dr. A.K. Mukherjee.

13. Tripathi, Awadh Bihari Ram. *Chemical effects on nuclear transformation of oxyominn thermal capture.* BHU. Dr. S.P. Mishra.

14. Vijay Kumar. *Kinetics and mechanisms of the reactions of some carbontetrahalides with some selected amines.* Panjab. Prof. D.V.S. Jain.

Earth Sciences

1. Joshi, D.A. *A study of secondary minerals in basalts of the Poona-Kolhapur Area, Western Maharashtra.* Shivaji. Dr. C.K. Bhaskre and Prof. K.B. Powar.

2. Mehta, Sunil Kumar. *Geology, biostratigraphy and palaeo-ecology of certain fossiliferous sections of the Murses group, Jammu and Kashmir and Himachal Pradesh.* Panjab. Prof. Ashok Sahni.

3. Namdas, M.R. *Mineralogy and geochemistry of bauxite deposits of Dhangarwadi, Kolhapur District, Maharashtra.* Shivaji. Prof. K.B. Powar and Dr. C.K. Bhaskre.

4. Sath Didar Singh. *Geomorphology and groundwater studies of the Bist-Doab tract, Punjab State, India.* Panjab. Prof. A.B. Mukherji and Dr. K.P. Singh.

Engineering & Technology

1. Anil Kumar. *Extractive metallurgy.* BHU. Prof. P.N Prasad

2. Dikshit, Shriniwas. *Correlation between ballistic performance and metallurgical properties.* BHU· Dr. G. Sundararajan and Prof V.V. Kutunba Rao.

3. Mishra, Krishna Kumar. *Studies on chalcogenide glasses.* BHU. Prof. B.S. Tyagi.

4. Singh, Vinay Kumar *Mechanical behaviour of engineering ceramics.* BHU. Dr. R.K. Sinha.

5. Vinayak, Suresh. *Microwave radiometry.* Delhi. Dr. G.S. Uppal and Dr. K.K. Gupta.

BIOLOGICAL SCIENCES

Anthropology

1. George, Sophia. *To study the role of non-genetic and genetic factors in human adaptation, in the regions endemic for Mycobacterium leprae/M. tuberculosis.* Delhi. Prof. S.C. Tiwari and Prof. M.P.S. Menon.

2. Malik, Nitin. *Human cytogenetics.* Delhi. Dr. P.K. Ghosh.

3. Sethi, Kamal. *Cytgenetical study of Down's syndrome.* Delhi. Dr. P.K. Ghosh.

Microbiology

1. Singh, Rawal Preet. *Manipulation of deamination reactions in the human microorganisms.* Panjab. Dr. J.K. Gupta and Dr. Sudarshan Singh.

Biochemistry

1. Ambasht, Pravin Kumar. *Effect of use of Terminalia arjuna on lipid profile in ischaemic heart disease.* BHU. Prof. S.S. Dubey.

2. Joshi, Alpana B. *Studies on isolation and regeneration of protoplast from some members of Graminae.* Devi Ahilya. Dr. R. Bhardwaj.

3. Karnik, Aarti. *Study of immunodeficiencies.* Devi Ahilya. Dr. Vijayvargiya.

4. Maheshwari, Vijay. *Studies on the mechanism of activation of enzymes of photosynthetic carbon dioxide fixation by light.* Devi Ahilya. Dr. R. Bhardwaj.

5. Nagar, Sanjay. *Studies on the effects of pyridazinone herbicides on photosynthesis in invitro and in vivo.* Devi Ahilya. Dr. R. Bhardwaj.

6. Patel, Manu Bhai. *Studies on isolation and regeneration of protoplast from some members of Leguminosae and Brassicaceae.* Devi Ahilya. Dr. R. Bhardwaj.

7. Sharma, Dharmendra Kumar. *Studies on the mechanism of inhibition of photosynthesis by diphenylether herbicides.* Devi Ahilya. Dr. R. Bhardwaj.

8. Sina, Seyed Ali. *Role of haptoglobin in certain metabolic disorders.* Devi Ahilya. Dr. A.P. Bhandarkar.

9. Singh, Ajay Kumar. *Biochemical studies on leishmaniasis.* BHU. Dr. A.K. Rastogi and Dr. H.P. Pandey.

10. Singh, Jai Prakash Narayan. *A comparative study of some herbal diuretics.* BHU. Dr. H.P. Pandey and Dr. R.H. Singh.

11. Vasandani, Veena M. *Liposome technology.* Delhi. Dr. Prahlad C. Ghosh.

Botany

1. Lalitha Rao. *Nodulation and regulation of nitrogen fixation in relation to saline conditions in some important leguminous crop plants.* Panjab. Dr. K.K· Dhir.

2. Pathak, Promila. *Asymbiotic germination and clonal propagation of some commercially important and endangered orchids of India using tissue culture techniques.* Panjab. Dr. S.P. Vij

3. Ravinder Kumar. *Studies on hellvelloid, morchelloid and otideioid discomycetes.* Panjab. Dr. S.C, Kaushal

4. Shaila Rao, B. *Regulation of cell differentiation and morphogenesis by auxins in plants.* Delhi. Prof. R.N. Chopra and Dr. S.C. Bhatia.

Zoology

1. Handa, Neelima. *A study of the biology of curculionidae based on representative species (Coleoptera : Insecta).* Panjab. Prof. H.R. Pajni.

2. Jaiswal, Richa. *Antihepatotoxic studies on Acrellia mellieolia Linn.* Panjab. Dr. R.C. Sobti and Prof. S.S. Handa.

3. Kalsi, Rajiv Singh. *Breeding biology of the redwattled lapwing, Vanellus indicus indicus (Boddaert), along with observations on some aspects of its maintenance behaviour.* Panjab. Prof. S. Khera.

4. Mahamuni, A.D. *Studies on integrated control of the sorghum shootfly, Atherigona soccata Rondani in Deccan Canal region of Maharashtra.* Shivaji. Dr. C.D. Basarkar.

5. Singh, Har Narayan. *Some aspects of endocrinology of reproduction in a fresh water fish.* BHU. Prof. T.P. Singh.

6. Surinder Kaur. *Histopathological effects of chit in synthesis inhibitors on a mosquito and a plant nematode,* Panjab. Prof. S. Khare and Dr. P.K. Mittal.

Medical Sciences

1. Agrawal, Vibha. *HLA type and immunologic aberrations in rheumatoid arthritis and rheumatic fever.* BHU. Prof. (Mrs) R.M. Gupta.

2. Chaturvedi, Geetawali. *Clinical psychology.* BHU. Dr. K.P. Shukla.

3. Koley, Kishori Mohan. *Antacoid pharmacology.* BHU. Dr. S.B. Acharya.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities.

PHYSICAL SCIENCES

Mathematics

1. Datta, Sankar Kr. *Some theoretical aspects of electron and positron collisions with atoms.* Burdwan. Dr. Ganapati Banerji.

2. Gupta, B.N. *Study of some laminar flows in thin liquid films and regions having porous and non-porous boundaries.* Kumaun. Dr. P.N. Srivastava.

3. Gupta, Shishir. *Stress wave propagation in some non elastic medium.* ISM. Prof. S. Dey.

4. Rawat, M.S. *Applications of special functions expressed in matrix form.* Kumaun. Dr. H.S. Dhami.

5. Satyavani, Kopparty. *Integral and measure differential equations in finite and infinite dimensional spaces.* Andhra.

6. Sen, Ashima. *On the solution of some complementarity problems.* Sambalpur. Dr. Jayaram Parida.

Physics

1. Babu, G.S.D. *The study of faint galactic open clusters.* Bangalore. Prof. J.C. Bhattacharya and Dr. M.N. Anandaram.

2, Bhatt, Rashmia. *Non-abelian gauge theory of fields associated with dyons.* Kumaun. Prof. B.S. Rajput.

3. Jain, Kiran. *New features in rotational bands of odd—A nuclei.* Roorkee.

4. Kumaraswami, K. *Studies on the lattice dynamics and elastic properties of crystals.* Madurai.

5. Muralidhar, Kundeti. *Ultrasonic study of phase transitions in liquid crystals.* Andhra.

6. Rengarajan, N. *Studies on the optoelectronic characteristics of cadmium selenide.* Madurai.

7. Thomas, P.T. *Studies on the properties of irradiated wood.* Calicut. Dr. K. Neelakandan.

8. Tyagi, S.V.S. *The annealing studies on the structure and properties of electroless amorphous transition metal-metalloid system: NI 100-x-Px.* Roorkee.

Chemistry

1. Balasubramanian, K. *Studies in catalytic transformation : Dehydration and dehydrogenation over alumina, chromia-alumina, plantinum-alumina and chromite spinels in vapour phase.* Anna.

2. Bandyopadhyay, Chandrakanta. *Chemistry of 3-functionalised 4-Oxo-4H-1—benzopyrans.* Calcutta.

3. Bhaumik, H.L. *Chemical investigation of some Indian medicinal plants and biosynthesis of 7-acetoxy-4-methylcoumarin.* Roorkee.

4. Biswal, Uttam Kumar. *Thermodynamics of ionic solvation in various solvent systems.* Utkal.

5. Chacko, P. Annam. *Studies on the synthesis and CNS activity of strychine derivatives.* CUST. Dr. P. Madhavan Pillai.

6. Dhondge, Sudhakar S. *Volumetric and compressibility behaviour of carbohydrates in dilute aqueous solutions.* Nagpur.

7. Dutta Purkayastha, Ranendra N. *Synthesis, reactivity and structural assessment of heteroligand peroxo, acetato and acetylacetonato complexes of uranium (vi) and oxalate and mixed ligand fluoro complexes of manganese (III).* NEHU. Dr. M.K. Choudhury.

8. Gangopadhyay, Kalyanmay. *On the study of the mechanism of extraction of trivalent rare earths by D-(2-ethylhexyl) phosphoric acid with the help of radioactive indicates.* Calcutta.

9. Ghosh Roy, Tapashi. *Studies on the transition metal complexes of tetra azamacrocylic ligands.* Roorkee.

10. Haldar, Chandana. *On certain aspects of solar energy and solid state problems.* Delhi.

11. Juliana, M. Mary. *Studies on the optoelectronic characteristics of cadmium sulphide.* Madurai.

12. Mohammad Sardar Hussain. *Coordination chemistry of transition metal ions.* Karnatak. Dr. A.S.R. Murthy.

13. Mukherjee, D. *Studies on the corrosion of high carbon cold drawn steel rope wires and its control.* ISM. Prof. N.S. Rawat and Dr. S.V.K. Iyer.

14. Mukhopadhyay, Subir Kumar. *Studies on the vapour phase oxidation of orthoxylene and naphthalene of phthalic anhydride on a common catalyst.* ISM. Prof. N.S. Rawat and Dr. M. Chakravartti.

15. Oriel, Shalini. *Structural studies on transition metal complexes with mono and polydentate ligands.* H.S. Gour. Dr. Gopal Narain.

16. Patil, Rangarao Hari. *Kinetics and mechanism of oxidation of aliphatic acid hydrazides by peroxydisulphate ion.* Shivaji. Dr. J.B. Patil.

17, Saxena, Deepak. *Effect of zirconium and yttrium additions on high temperature sulphidation behaviour of Fe-15, Wt.% Cr-4, Wt% Al alloy.* Roorkee.

18. Sethumadhavan, R. *Studies on inhibition of acid corrosion of commercial copper by guanidine derivatives.* Delhi.

19. Shrivastava, Madhulika. *Studies on analytical application of 2-thiorotic acid and its complex formations with some of the rare earth elements.* Ravishankar. Dr. G.S. Pandey.

20. Singh, Asha Lata. *Studies on some mixed ligand transition metal complexes involving dithiocarbamate, glycinate, oxinate and acetylacetonate moities.* Delhi.

21. Tharama Raj, G. Varkees. *Correlation analysis : Application of Hammett equation to naphthalene derivatives.* Madurai.

22. Upadhyay, Sweta. *Potential analytical reagents for trace determination of some organic toxicants.* Ravishankar. Dr. V.K. Gupta.

23. Vajpai, Anjana. *Physico-chemical studies of some products extracted from Vigna, Solanum, Eucalptus type of plants.* Devi Ahilya.

Earth Sciences

1. Bujarbarua, Gayatri. *Studies on the limestones of the upper member of the Shella Formation (Prang limestone of Sylhet limestone stage) with special reference to sedimentology, Kamorrah Area, Meghalaya.* Gauhati. Dr. D.N.D. Goswami.

2. Chakravarty, Arundhati. *Fission track ages of some coexisting minerals in granites of Assam-Meghalaya plateau.* Gauhati. Prof. K.M. Pathak and Prof. P.K. Chowdhury.

3. Gnaneshwar, P. *Lithogeochemical surveys in Hyderabad granites.* Osmania.

4. Mohammad Mahamood Alam. *Geology and petrochemistry of Baraker measure coals of Jharia coalfield, Bihar.* ISM. Prof. K.L. Rai and Dr. B. Banerjee.

5. Pant, Rajendra. *Petrochemistry and petrogenesis of the Gangotri granite and associated granitoids, Garhwal Himalaya.* Roorkee.

6. Venkatrama Raju, S. *Geochemical studies on gold mineralization in Ramagiri, Andhra Pradesh, India.* Osmania.

7. Verma, Naveen Kumar. *Morphotectonic study of the Narmada Valley around Jabalpur using remote sensing techiques.* H.S. Gour. Dr. S.N. Pandey.

Engineering & Technology

1. Balasubramanian, V. *Bonding in pure solids : A density functional approach.* Roorkee.

2. Basu, Jhankar. *Theoretical and experimental stress analysis of an orthodox single acting tea rolling machine.* Burdwan. Prof. S.K. Basu and Dr. R.C. Bishnu.

3. Bhaduri, S.C. *Thermodynamic properties of refrigerant absorbant pairs for vapour absorption refrigeration system.* Roorkee.

4. Bhupinder Singh. *Development of a solar powered refrigerator.* Roorkee.

5. Das, Annapurna. *Radiation characteristics of a class of microstrip antennas.* Delhi.

6. Desai, J.P. *Hysteresis behaviour of reinforced concrete braces and the seismic response of braced frames.* Roorkee.

7. Kuldip Singh. *DCMIN : A new interconnection network topology for parallel processing.* Roorkee.

8. Pande, V.N. *Microprocessor aided online processing of electrocardiographic signal for diagnosis and prosthesis.* Roorkee.

9. Pradeep Kumar. *Use of water hyacinth in waste water treatment and biogas production.* Roorkee.

10. Sudarshan Singh. *Heat transfer during pool boiling of lithium bromide water solutions.* Roorkee.

11. Tarnekar, Shrikrishna Govindrao. *Some studies in power system protection Viz transmission line protection based on travelling waves.* Nagpur. Dr. Y.G. Paithankar.

12. Venkateswarlu, Vallenky. *Geomechanics classification of coal measure rock via-a-vis roof supports.* ISM. Prof. A.K. Ghose and Dr. N.M. Raju.

13. Verma, C.L. *Simulation of mixed feed lime shaft-kiln performance analysis and optimal design.* Roorkee.

CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF KALYANI

KALYANI, WEST BENGAL-741235

Adv. No. 5/87 Dated : 12-11-87

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3. **Lecturer in Bio-Physics**--One post (purely temporary basis against lien vacancy)

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(ii) Any branch of Physics, preference being given to experimentalists/specialisation in digital electronics.

(iii) Nuclear Physics, preferably with experience in any branch of experimental nuclear Physics. Should be able to organize and run postgraduate nuclear physics laboratory.

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6. **Assistant Director,** Centres for Adult & Continuing Education scheme of UGC —One post (Temporary)

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Temporary Lecturer would have no claim absorption on permanent basis in future in this University.

Those who applied previously in prescribed form for the posts of Lecturer in Physics vide Adv. Nos. 4/85 and 5/85 and Assistant Director, Centres of Adult & Continuing Education scheme of UGC vide Adv. No. 4/86 and 4/86 (2nd) need not apply again.

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P. Sircar
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3.	Lab Assistant	ONE	—	—
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2.	Lecturer in Psychology	TWO	—	ENG/GUJ
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2.	Research Officer	ONE TMP TENURE	—	—
F	**P.G. DEPT. OF LIBRARY SCIENCE BOMBAY-20**			
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Sr. No. of Post	Post and Name of the Dept./ Institution	No. of Post	Post Under Reserved Category	Medium of Teaching
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3.	Lecturer in Nursing	ONE TMP	—	ENG
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*2.	Assistant Director	ONE	ONE (First time Adv.)	—
J	**RESEARCH CENTRE FOR WOMEN'S STUDIES, BOMBAY-49**			
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P	**SNDT ARTS & COMMERCE COLLEGE FOR WOMEN, POONA**			
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Q	**P.V. POLYTECHNIC, BOMBAY-49**			
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R	**DEPT. OF SPECIAL EDUCATION BOMBAY-49**			
1.	Technical Assistant	ONE	—	—
S	**POST GRADUATE DEPT. OF EDUCATION (SCIENCE & MATHEMATICS) AT SNDT COLLEGE OF EDUCATION, POONA**			
1.	Lecturer in Education (Science & Mathematics)	ONE	—	ENG/M
T	**SNDT COLLEGE OF EDUCATION FOR WOMEN, POONA**			
*1.	Lecturer in Education Specialisation of Teaching 1 Commerce, Economics * 2 Marathi/History/Sanskrit/Political Science (Any two of the above)	TWO	ONE (First time Adv.)	ENG/M
U	**COMPUTER CENTRE OF THE SNDT WOMEN'S UNIVERSITY, BOMBAY-49**			
1.	Key Punch Operator	ONE TEMP TENURE	—	—
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2.	Reader in Art & Painting at the P.G. Dept. of Art & Painting	ONE	—	MAR/EN GUJ
*3.	Lecturer in Economics at P.G. Dept. of Economics	ONE	ONE (First time Adv.)	MAR/EN GUJ

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University News

MONDAY, NOVEMBER 30, 1987 Rs. 1.50

OFFICE MANAGEMENT

- Motivation and Leadership Role
- Management of Change
- Checks and Inspections
- Group Discussion

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UNIVERSITY
NEWS

OL. XXV NOVEMBER 30
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ice Rs. 1.50

Weekly Chronicle of Higher
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Editor :
SUTINDER SINGH

Motivation and Leadership Role in Office Management

Sukhdev Singh*

Dr. Sukhdev Singh

Office and administrative management as a professional field has emerged in recent years. By definition it is that function within the organization which has responsibility for the overall operations of the organization. Contributing to the enhanced prominence and importance of administrative managers has been the revolution in information technology. It has created a need for professionally competent office managers—managers capable of analysing informational needs of an organization, designing systems to meet these needs, providing the ancillary services associated with information, and coordinating the diverse activities of various specialists within the organization, directing them towards accomplishment of overall organizational objectives.

The development of work systems emphasised in administrative management cannot, however, ignore the **social systems**, or human relationships, upon which all other systems depend heavily for their success. Need for developing and motivating employees as well as the process of team building through effectively played leadership role can hardly be over-emphasised.

Motivation

Traditionally, management of governmental, military, religious and early business organizations assumed that the "prime mover" in motivating people to perform could only be **authority**. Leaders, it was assumed, should make all significant decisions as to what should be done and how. They should have authority to command action of others and to administer rewards and penalties in relation to performance. The source of authority was considered to be the church, the State, the rights of private ownership where existent, or some such other right.

Management views towards the influence which determine an employee's will to work are now undergoing changes that are substantial and long overdue. Slowly a very different philosophy of motivation has evolved. This pattern of thought recognizes serious limitations in top-down, authoritarian leadership. Employees' resentment against authoritarian control has been observed to build up as standards of living have risen and as individuals have become more and more aware of their rights. Of perhaps equal significance, rising levels of education have caused many persons to raise their levels of aspiration, to wish to make more of their lives than they formally thought possible.

**Vice-Chancellor, Punjab Agricultural University, Ludhiana.*

In addition to subtle influence which may have penetrated management thought as living standards and educational levels have risen, there have been significant research contributions in the social sciences, which have had parallel effects. Elton Mayo headed a team of researchers conducting the famed Hawthorne Experiments (so named because carried on the Hawthorne plant of Western Electric) during the late 1920's which first stirred management thought with this finding : The most influential factor in determining employee performance is the general set of **attitudes** which employees have towards their work, associates, and management. Further research by psychologists, sociologists, anthropologists, and other social scientists has thrown additional light upon the forces which stimulate people to perform effectively while at work. Much research of this type is now in progress.

Priority of Human Needs

One of the most widely accepted conceptual framework for current theories regarding motivation centers around recognition of the existence of a priority in human needs.[1] According to this general theory, human needs tend to follow the pattern presented hereunder in the sequence in which individual usually become concerned with them :

1. **Physiological needs**—for survival, food, clothing, shelter, air to breathe, rest to overcome fatigue, and the like.
2. **Safety and security**—for protection against danger and deprivation.
3. **Social needs**—for association with other persons, acceptance, belonging.
4. **Egoistic needs**—for self esteem and for a good reputation in the eyes of others.
5. **Self-fulfilment**—for realizing one's potentialities, finding expression for one's creative abilities.

In a society which enjoys a generally high standard of living and a high and rising educational level, the first two levels are already reasonably well met for most, although not all, people. Consequently, in such situations, pay, fringe benefits, and job security are no longer powerful motivations, except to the extent that they influence status in the eyes of oneself and others. However, for persons living in countries where living standard and educational levels remain low or where physiological needs are not reasonably met, the lower order needs still serve as motivators in many cases.

With regard to the higher levels of human needs, especially the egoistic and self-fulfilment needs, a very different situation exists for the typical employee. Most employees are now predominantly concerned with filling social needs, both on and off the job, and with egoistic needs. They seek acceptance, a sense of belonging, status and recognition in a wide variety of forms. The highest of the needs listed, self-fulfilment (or self-realization, self-actualization) is attained by comparatively few. In order to achieve it in any large measure, an individual usually must be successful in an activity which is meaningful, useful, and creative to the extent of his abilities. He will need opportunity to use his mental as well his physical talents, in most cases.

However, for the majority of employees, the egoistic and self-fulfilment needs are largely unfilled. One reason is the close relationship to the work each person does, and the usual shortage of opportunities for him to think and use his creative abilities in his work. Certain management challenges are, therefore, indicated.

For administrative (office) management, there is another group of human needs that is more appropriate for the supervisory aspects of managing people at work. While this brief list is rather similar to that of Maslow, it provides the practical approach that all supervisory personnel should have in order to integrate these practices into their everyday interactions with the office staff. None of these needs manifest themselves individually, and except for the first, a priority is difficult to justify. They are all important and all are involved to some extent in the supervisory-worker interactions each day.

Security

The need for security is broken down into economic security and safety security. Economic security implies the basic need for food, clothing, and shelter or else the economic means to obtain these items. Safety security implies the need for protection, both physically and emotionally.

Belonging

This is perhaps the strongest need of the group. The need to belong to something, to someone, to some group is evident in all of our daily contacts with people and with organizations. Employees should be made to feel a part of the group, the team, and encouraged to identify as much as possible with the organization, and with the goals of the organization.

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[1] A.H. Maslow "A Theory of Human Motivation" *Psychological Review*, 50, No. 4, July 1943, 370-396.

Recognition

Recognition for performance is received from the supervisor, the work group, the organization, and intrinsically, from the individual himself. Recognition can either be informal or formal, but the important criterion is that recognition should always be sincere and awarded only when clearly justified. Although, there is one element of truth in the theory that even negative recognition is better (relatively speaking) than no recognition at all. The amount, the timeliness, and the manner in which recognition is expressed by the supervisor obviously depends upon the situation and the personalities of the individuals concerned.

New Experiences

One may question the inclusion of a need such as new experiences. While the justification is not particularly over-whelming, there is considerable merit to the theory that stagnation is the ruin of many capable employees. We all speak of the "rut" of the job of life, and of our lack of progress from time to time. The need for new experience is a need for a refreshed attitude on the part of an employee to his work. It can be a way to encourage his job enthusiasm and a means for a dynamic understanding of his role in organization. Depending on the individuals and the job, a supervisor can provide new experiences to stimulate an employee's imagination and creativity and help him recognize his own potential. In other words, new experiences can improve the relationship of an individual to his job, thereby improving his attitude as well as the quality of his work.

Challenge to Management—Role of Leadership

In the most direct and simple terms, the challenge may be expressed as that of striving to make each employee a responsible, participating member of the organization. Achieving this goal requires creating conditions in which he can use his abilities, mental as well as physical, and in which he can see a close relationship between organizational success and his own personal success.

If an environment of this sort can be established, it is realistic to expect a much higher degree of dedication or commitment by an employee to his work and his organization. Self-development, high standards of performance, and a measure of self-expression in one's work, becomes goals sought voluntarily rather than demands imposed by an authoritarian source.

While giving increased attention to previously unrecognized needs of employees, management must obviously continue to think about the needs of the organization—about success in meeting its objectives, stability, and growth. Otherwise, there will be little opportunity to serve personal needs such as those just considered; and enterprise must successfully fulfil its primary mission if it is ever to provide employment opportunities.

What is needed, then, is an **integration of interests**, and leadership capable of meeting the needs of the organization, its employees, its owners, other special groups, and the general public.

Certain basic leadership practices which serve general interests may include Goal setting, Designing job, Working with supervisors, Working with associates, Working with subordinates, Communication, Participation, Performance appraisal, and General leadership requirements.

Since leadership is aptly defined as getting voluntary and willing cooperation of the subordinates, a participative or democratic leadership style has been found to be more effective in most circumstances. The value of employees' ideas in setting goals, formulating plans, improving methods, and controlling one's own performance need not be overemphasized for administrative management. Through participative management many sound ideas come to light which would otherwise be ignored. Morale improves, particularly where a reasonable portion of suggestions are acted upon. Individuals who think creatively develop themselves for higher responsibility.

In practice, participation ranges in degree from complete delegation of responsibility to consultation on major aspects of a problem or proposal, or on minor details of how to apply a plan already decided upon, or on employee reaction to a predetermined plan. In some cases, some decisions permit a much higher degree of participation than others.

The direct relationship to human needs is again apparent. Participation in numerous forms offers many opportunities for ego satisfaction and self-fulfilment.

General Requirements in Leadership

Implicit in the discussion of leadership practices are fundamental requirements which may be regarded as 'common denominators'. While specific techniques must be adapted to the leader, the people led, and the situation, we can single out certain attitudes and skills which will increase effectiveness in most situations.

Empathy in communications and in other contacts with people will nearly always lead to better results. A feeling for people and an understanding of a particular person's emotional reactions will enable any leader to adapt his approach to achieve a more favourable response; it is important, however, that the leader attempts to remain objective so that sentiment does not blind him to other requirements.

A genuine **respect for people**, coupled with deliberate effort to bring out the best in each person rather than to focus upon his weaknesses, will show itself in countless relationships, and will encourage people to grow and to live up to the confidence placed in them. Again **train-then-trust** is recommended as a philosophy to guide much leadership behaviour.

Integrity—basic honesty and fairness, acting fro conviction as to what is right rather than who is righ and setting high standards for one self as well as fo others—is perhaps the most essential of all leadershi qualities. At the same time, integrity must be comb ned with patience and understanding; people often re quire time to learn and adjust and they may have diffe ring values and personal needs. A manager must be realist; he will need a combination of integrity, tole rance, patience, and a good sense of timing.

Determination to get results very often proves to b the real measure of difference between highly succes ful leaders and those less successful. Excuses are o every hand if one is looking for them. But with philosophy of "results-not excuses", a leader so near always find ways to achieve results; such a philosoph in no way requires that a person be ruthless, unscr pulous, or inconsiderate of others. It suggests, instea that if his first approach to a problem fails, he will tr another approach, and he will use ingenuity and pe sistence until he finds an approach that leads to th desired ends.

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ANNOUNCEMENT

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Applications, which must include a detailed bio-data, research proposal, and list of lecture topics (seven copies each) must reach the Shastri Indo-Canadian Institute, 92 Golf Links, New Delhi-110 003 not later than **January 15, 1988.**

MANAGEMENT OF CHANGE

A Case Study of Madurai Kamaraj University

R. Kanagasabapathy*

Introduction

While Education helps the society to undergo social change, it should itself go on changing continuously so as to cater to the development needs of the society. Though many new ideas have evolved on what the structure or content of higher education should be and many changes have been tried, yet the situation remains unsatisfactory. The changes that have been made are not significant. The reasons may be many, and one of the important reasons is that sufficient attention has not been paid to the process of bringing in the required innovations and institutionalising them. This study attempts to find out how the application of the Principles of Management in the realm of Higher Education will bring about changes in the process of introducing innovations.

The Problem

The problem chosen is : A Study of Management of Change in Madurai Kamaraj University. The objective is to study the introduction and institutionalisation of some significant innovations in the affiliated colleges of Madurai Kamaraj University. The specific objectives are :

(1) To identify the various innovations that were introduced by the Madurai Kamaraj University in the affiliated colleges during the last fifteen years and categorise them as (i) affecting all the students/only part of them; (ii) optional for adoption/obligatory; and (iii) institutionalised/discontinued;

(2) To trace the travel paths of some selected innovations from the point of origin to the point of implementation ; and

(3) To locate certain crucial points in the process of implementation of innovations by Madurai Kamaraj University in its affiliated colleges with particular reference to planning, organisation, staffing, leadership and control.

Methodology

Ten innovations that were introduced by Madurai Kamaraj University in its affiliated colleges during the period 1965 to 1980 were identified and of them, three innovations, viz., Grading System, Semester System and Co-curricular activities were chosen for the study.

The population of the study : In Madurai Kamaraj University there were 81 affiliated colleges at the time of investigation, offering instruction in Arts, Science and Commerce subjects. Among them, the following formed the population of the study : (i) The Vice-Chancellors and officers of the University who hold office during the period of implementation of the innovations, (ii) The Secretaries of college committees, the Principals and the Office Managers who were serving in those 81 colleges during the period of investigation; (iii) The teachers who were working in the 81 colleges during the period of introduction of the respective innovations; and (iv) The students who were studying in the 81 colleges during the period of introduction of the respective innovations.

Of the 81 colleges, twelve colleges were selected purposively. In these colleges, all the Secretaries of colleges committees, Principals and Office Managers were treated as sources of information for the study. Further three Vice-Chancellors, four Officers of the University, the Director of Youth Welfare, the Director of Physical Education and the Director of Adult Education and two members of the Syndicate/Academic Council/Senate were treated as sources of information. Twenty teachers were selected randomly from each of these colleges who had served at the time of introduction of the innovations, Grading System and Semester System. For the innovation co-curricular activities, Assistant Professors of Physical Education, NCC and NSS Officers of all the 81 colleges were considered for the study since there were only one or two officers in each category. As regards the student respondents, 20 students from each college, who studied during the introduction of these innovations were selected randomly, keeping in view the different disciplines offered therein.

Two tools were developed to seek information for the study : (i) Questionnaire, and (ii) Interview

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[*Based on author's Ph.D. dissertation accepted by M.S. University of Baroda in June 1986.*]

**Principal, Aditanar College of Arts & Science, Virapandianpatnam, Tiruchendur.*

Schedule—(i) Questionnaires for (a) Teachers; (b) Students; and (c) Office Managers. (ii) Interview Schedules for (a) Vice-Chancellor of the University, (b) Convener of the Syndicate Sub-Committee, (c) Officers of the University, (d) Secretaries of college committees and (e) Principals of colleges.

Data were collected by (i) administering questionnaire, (ii) interviewing and (iii) library study. The collected data were analysed, and interpreted as follows : For specific objectives (i) and (ii), only theoretical and qualitative measures were employed. For objective (iii), the responses from the Principals, teachers, students and office managers of colleges, were analysed using percentage analysis and frequency counts.

Major Findings

Need for Innovation

The Convener, Principals, Teachers and students did not feel the need for introducing the Innovation Grading System; the Convener, Principals and students felt the need for the innovation Semester System but not the teachers; the Convener, the Principals and teachers felt the need for the innovation Co-curricular activities but not the students.

Grading System and Co-curricular activities have been withdrawn. The students did not feel the need for both.

Students found the innovation Co-curricular activities beneficial to them, though they did not feel the need for it.

Planning

In the case of all the three innovations, while collecting information, the University authorities failed to look into the past history of the innovations. Grading System had on an earlier occasion, been introduced and withdrawn at the Pre-University and Degree levels; Internal Assessment—a critical component of the Semester System—had been introduced in some Degree courses and withdrawn and it was in practice in the PG courses; part of the innovation Co-curricular activities was in practice and only on that infrastructure, this innovation was built. In all these cases neither the reasons for their withdrawal nor the present conditions of working were studied. This was a default on the part of the University authorities. Grading System was again withdrawn; Internal Assessment continued to be a critical point and the innovation Co-curricular activities was also withdrawn.

In the Academic Council, the decision-making body, conditions for free and frank discussion were created in the case of Semester System and not in the case of the other two innovations.

Though the Principals unanimously passed the resolutions in the Academic Council for introducing all the three innovations, in the case of Semester System they gradually began to show resistance at various meetings of the Academic Council and the Senate, in the case of Co-curricular activities they showed so much resistance at the Academic Council that it ultimately led to the withdrawal of the innovation.

Re-educative, persuasive, facilitative and power strategies were used in the implementation of the three innovations. Re-educative, persuasive and facilitative strategies helped in the implementation process, while power strategy led to the ultimate discontinuance of the innovation, Grading System.

Adequate planning was done in case of Semester System and the innovation continues. There was only 'under-planning' in the case of the other two innovations and they had been withdrawn.

Organisation

In case of all the three innovations, implementation both at the University level and at the college level, was generally done in a poor way. The following three aspects which were fulfilled in the case of the Semester System—(the innovation institutionalised) are the significant factors in implementing an innovation :

(i) Making the required organisational changes;
(ii) Principals delegating their work to a committee; and
(iii) Introducing the innovation as a pilot project, evaluating it and then extending it to other colleges.

Staffing

In all the three innovations, no officer—navigator—was appointed in the University, exclusively to be in charge of implementing the innovation.

Additional teaching staff were provided to meet the requirements to some extent and orientation provided to them was also adequate to some extent only, Adequate administrative staff were not provided oth in the University and in the colleges; orientation was not even thought of, for them.

Leadership

The Principals were much motivated towards the Grading System, but it had been withdrawn. Teachers were much motivated towards Co-curricular activities; but it had also been withdrawn. Both Principals and teachers were motivated to some extent towards the Semester System and it continues.

"It was a challenging task" was the chief motivator for the Principals and teachers.

A comprehensive draft, giving all the salient features of the innovation, was prepared and sent to all the colleges in the case of Semester System only and not in the case of other two innovations.

In case of all three innovations, whenever the Principals had difficulty in implementation, they did not write to the University. Further they did not make adequate use of the forums, Academic Council and Senate, to air their views.

In the case of all the three innovations, the teachers explained the innovation to the students and the case of difficulty, students represented mostly to the teachers. This brings out the necessity of giving adequate orientation to teachers; otherwise the innovation is likely to be distorted.

With regard to the Grading System, the University authorities could not face the resistance from the students successfully and in the case of Co-curricular activities, they could not face successfully the resistance from the Principals. The innovations had been withdrawn. In case of Semester System, they were able to face the resistance from Principals, Teachers and students at various stages and the innovation continues.

"Facing resistance" is one of the major tactics to be successfully used.

Lack of leadership on the part of the University authorities is revealed in the case of Grading System and Co-curricular activities which ultimately led to the withdrawal of the innovations. Lack of leadership is seen on the part of the Principals in the case of Grading System and Co-curricular activities; and on the part of the teachers in the case of Grading System.

This brings out the need for training in leadership (including change) to be imparted to University authorities, Principals and teachers.

Control

In the case of all the three innovations, controlling teachniques were fairly well used but proper remedial action was not taken in time.

Discontinuance

Both Grading System and Co-curricular activities have been withdrawn. But the innovation, Co-curricular activities has produced functional consequences.

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There may be functional consequences even from innovations discontinued.

The innovation Co-curricular activities was withdrawn in haste—without a fair trial given to it.

Some Suggestions

1. NEED FOR THE INNOVATION

Before introducing an innovation, the University authorities should find out whether the students feel the need for the innovation. If the need is clearly expressed, steps may be taken to introduce the innovation. If the need is not expressed, but the authorities are convinced that the innovation will definitely help the student community, then they should educate the students and make them feel the need for the innovation.

2. PLANNING

2.1 Collecting Information and Forecasting

The University authorities should

(1) gather all the information available about the innovation in the form of brochures, books and training manuals;

(2) conduct seminars, workshops pertaining to the innovation where experienced personnel in the field would participate as resource persons and all the points for and against the innovation should be debated;

(3) go through the past history of University and if at any time, the innovation or some related innovation had been in practice and withdrawn, the reasons for the withdrawal should be carefully analysed;

(4) make an in-depth study of the proposed innovation or part of it which is in operation in some area or other at the time of introduction of the innovation; and

(5) do proper exercises for forecasting. There are theories of interactive forces of change. In its simplest form, it means that the planners should identify the forces that are likely to be supportive of the change and those that are likely to resist it. A measure should be assigned to each of the forces—positive for the supportive forces and negative for the resistive forces; if the algebraic sum is positive, the authorities may go ahead with the innovation or steps should be taken to strengthen the positive forces and weaken the negative forces.

2.2 Decision-Making

The details of the innovation should be sent to all the Principals well in advance and they should be requested to have wide discussion with the users concerned (teachers, non-teaching staff and students) arrange seminars, workshops, etc. and to send the comments, suggestions for improvement to the University. Then a meeting of the opinion leaders—in the University set up the Principals and teachers who are members of the Academic Council, Senate and Boards of Studies should be held, where an informal and frank discussion should be had. Based on these, the details of the innovation should be prepared in the resolution form and sent to the members of the Academic Council and the Senate well in advance. Again in the Academic Council and Senate there should be fair and frank discussion. The authorities should encourage more members to react and create a condition where the elder are free to express their opinion without fear. The authorities should find value in resistance. Then a decision should be taken.

If a decision is taken to introduce the innovation, well and good; even otherwise no regrets need be felt by the University authorities. For, the academic bodies have a function as gate-keepers also, since all innovations may not be useful.

Just because the resolution has been passed involving all concerned, the authorities need not be complacent that there will be no resistance in future. If at the implementation stage, obstacles arise which the members not able to overcome, then again resistance may arise.

2.3 Laying Down Objectives

In the University set-up, the authorities and officials in the University Grants Commission, the authorities and officials of the University, the Principals and teachers should be familiar with 'Management by objective' or 'Managing for Results'.

If the innovation is introduced at the initiative o the UGC, then the UGC should lay down the overal objectives. The University authorities should formulat specific objectives for the colleges and place then before the Academic Council and the Senate for discussion and approval. The Principals should, in turn ormulate objectives for their Heads of Departments nd Teachers.

Setting objectives is a difficult task and it needs ractice. Hence all concerned should be trained in Management by objectives'.

.4 Strategy and Tactics

(1) While introducing innovations, re-educative, persuasive and facilitative strategies are to be adequately used. Power strategy is to be avoided.

(2) 'Facing resistance' is an important tactics which is to be carefully and successfully used.

(3) In implementing an innovation; the following tactics should also be used:

(a) Convincing the users that the consequences of the innovation will be positive.
(b) Finding Value in resistance at the initial stage.
(c) Ensuring that the job security of no one is threatened.

2.5 Information System

There should be an effective Management Information System (MIS) which should provide the University authorities in time, the adequate information they need. The following infrastructures that exist in the University system may be knitted together and a good MIS may be evolved:

(i) Comments made, resolutions moved and questions raised by members in the Academic Council and Senate;

(ii) Recommendations and findings in the seminars and workshops held in the University where experts are invited as resource personnel and principals and teachers and students participate;

(iii) Members of the Syndicate and the Officers of the University visiting the colleges periodically and collecting first hand information; and

(iv) Survey reports—scientifically carried out by the Department of Education or other competent bodies.

2.6 Supporting Plans

Policies, procedures, rules and regulations regarding the innovation, as applicable, should be prepared in detail well in advance so that everyone gets a clear understanding of them.

The budget, in terms of additional money, equipment and manpower, should be prepared. Efforts should be made to generate or procure the additional resources required. In the University system, the University may not have the resources required to provide additional finance, equipment and manpower to the affiliated colleges. In that case proper authorities should be approached well in advance and it should be ensured that the additional resources could be provided right in time. Only then the innovation should be implemented.

2.7 Making Plans Effective

For the successful implementation of an innovation, adequate effective planning should be done taking into account all the management activities. Both under-planning and over-planning should be avoided. Over-planning occurs while writing elaborate reports beyond need, etc.; Under planning occurs when significant factors are not taken into account.

3. ORGANISATION

A small committee with not more than five members should be appointed to monitor the innovation throughout. The chairman or convener of the committee should be an able person dedicated to the task.

At the implementation stage—both at the University level and the college level—great care should be taken, since this is the crucial stage. The following points are to be noted:

(1) Opinion leaders should be identified and their support sought.

(2) Required organizational changes should be made in all the relevant sections of the University.

(3) Implementing innovations in succession may be avoided, as far as possible.

(4) Sufficient time should be given for the administrative staff of the University and the teachers in colleges to implement the innovation.

(5) Personnel, whose work-load is likely to increase due to the implementation of the innovation, should be identified and adquate compensation made.

(6) It should be determined whether the colleges are in a fit condition to receive the innovation, by mapping their Organisational Climate (OC). Teacher Morale (TM) and Change Proneness of teachers (CP) by the standard attitude scales available. Efforts may

be made to improve the standard of colleges, wherever necessary, by applying suitable Organisational Development (OD) procedures. Willingness on the part of the colleges to introduce the innovation alone should not be taken as an indication of readiness to implement the innovation.

(7) Wherever possible, the innovation should be introduced in selected colleges, as a pilot project. The results of the pilot project should be scientifically studied by a survey with regard to its effectiveness. Only when established that the innovation is effective in bringing benefits to teachers and students, it should be extended to other colleges. Just because the innovation has been going on for a period, it does not mean that the consequences are positive. In other words, if there was no protest from teachers and /or students it should not be taken that the innovation has been implemented successfully.

(8) At the college level, the principals should delegate the task of implementation. They should appoint either one member of the staff or a small committee of members of the staff to be in charge of implementing the innovation.

(9) Whenever any conflict arises between individuals or groups, conflict resolution should be resorted to. Conflict management skills should in fact be a prerequisite for those assuming higher education administrative roles.

4. STAFFING

An officer should be appointed in the University—the navigator—to be exclusively in charge of the the implementation of the innovation.

Additional administrative staff needed for the University should be visualised and provided in time and in adequate number.

To provide additional teaching and non-teaching staff in the colleges, efforts should be made to approach the Government in time and the staff should be provided in time.

The University should make arrangements to give adequate orientation/training to the Principals, Heads of Departments and teachers in colleges. Conducting orientation for Principals and Heads of Departments and asking them to conduct orientation for teachers in their respective colleges may not be effective.

Eminent educationists should be invited as resource personnel to conduct the orientation programmes. Training manuals and other relevant literature should be obtained from various sources—University Grants Commission, Association of Indian Universities, etc.—and distributed to the Colleges in sufficient number. When conducting orientation programmes, care should be taken to bring in the required attitudinal changes in teachers. For example, in the Semester System where Internal Assessment is involved, there should be an attitudinal change on the part of the staff towards students.

Orientation/training programmes soould be conducted for the administrative staff of the University and the non-teaching staff of the colleges. This is a significant factor.

Those who are engaged in these training programmes should be familiar with the inhibiting factors for change. They should use for their guidance, books brought out on "Training for change agents."

5. LEADERSHIP

5.1 Motivation

All concerned should be motivated to carry out the innovation. There are many theories of motivation. University authorities, officials and Principals should be made aware of those theories so that they may take proper steps to motivate the concerned personnel.

In the educational system though 'altruism' is one of the chief motivators for teachers, authorities should not rely on that only. They should apply the following motivators also according to the circumstances :

1. Monetary reward,
2. Positive reinforcement-appreciation of good work,
3. Participation,
4. Job enrichment, and
5. Improving organizational climate.

5.2 Communications

A) University to the Colleges :

(a) A comprehensive draft giving all the details of the innovation should be prepared and sent to all concerned in time. It should be such that it gives a clea orking knowledge of the innovation to the Principals, eachers and students and the administrative staff oth in the University and in the Colleges.

(b) The Secretaries of the college committees hould be informed of the innovation, giving additional etails as to what facilities they are expected to provide to implement the innovation successfully.

(c) After sending one comprehensive draft, a number of communications should be sent periodically so that the message is often repeated and an impact is produced on all concerned.

B) Inside the Colleges :

(i) Information to the teachers :

In addition to convening a staff meeting, explaining and discussing the details of the innovation, the principals should arrange to issue copies of the document detailing the innovation to all the teaching and non-teaching staff in the colleges. Only when one has got a copy in his hand, he will be able to go through the details.

The University authorities may arrange to print sufficient copies and distribute them to all concerned through the Principals.

ii) Information to Students :

In addition to explaining the details of the innovation to the students through the teachers in the classes, arrangement should be made to have it printed in the college calendar—so that every student will be able to go through it at leisure and seek clarification.

5.3 Providing Leadership

Leadership is like that of an orchestra leader whose function is to produce coordinated sound and correct tempo through the integrated effort of the musicians. Depending upon the quality of the director's leadership, the orchestra will respond (Koontz *et al*—1982). In the University set up there are many categories of leadership : the University authorities, the University officials, the Principals, the teachers and the students leaders. Everyone should play both his role as an individual and his role as a leader so effectively that the innovation would be successfully implemented. Every category should be familiar with the qualities of leadership. Suitable training programmes should be arranged periodically to develop the qualities of leadership in all those categories.

Balanced marketing of an innovation should be done. There should be neither aggressive marketing relying heavily on promotion nor minimal marketing relying heavily on production.

6. CONTROL AND REMEDIAL ACTION

In the colleges, the Principals should periodically evaluate the implementation of the innovation by calling for reports from the teachers and by other means and send periodical reports to the University. They should also make use of the Academic Council and Senate to air the views of the teachers and students.

The University authorities should take adequate steps to know whether the objectives were being achieved. Periodically they should call for reports from the colleges, conduct sample surveys and arrange for personal visits to the colleges by members of the Syndicate and officials of the University. Based on the reports, they should take proper remedial action so that the objectives are achieved.

The University authorities should look for critical points where things are most likely to go wrong and arrange for control.

The authorities should look not only for regular deviations but also for positive deviations. Some individuals or institutions may do better than what is laid down in the objectives, in some aspect or the other. They should be spotted out. They should be encouraged and their achievements should be communicated to others. Then they will feel motivated and this may lead to further improvement of the objectives themselves.

7. IMPACT

A) Consequences of the Innovations :

(1) When an innovation is implemented, the authorities should not assume that just because the innovation is continuing, the consequences are positive. They should periodically study the consequences always having in mind that the consequences are positive only if the innovation is effective.

(2) Even when an innovation is withdrawn, the consequences should be studied since it may also produce some functional consequences.

B) Discontinuance of innovation :

Any innovation introduced should not be withdrawn, without adequate trial. □

CHECKS AND INSPECTIONS

S.R. Joshi*

Meaning and Purpose of Inspection

The word 'Inspection' means "the act of looking closely into; careful or official examination". Various administrative commissions, committees, etc. appointed by the Government to suggest improvements in the methods of working have, time and again, emphasised the need of having a manual of office procedure for every organisation. The procedure and practices prescribed in the manual are supposed to be such as to help in the achievement of the objectives of the organisation as economically as possible. A manual of office procedure itself cannot achieve the objectives unless it is ensured that the provisions contained therein are understood properly and practised intelligently. Even this may not be very helpful if the old procedures are allowed to continue without any review so as to test their intrinsic soundness and utility from time to time, or to ensure that the procedures which have become out-dated, should be weeded out and replaced by new ones, to suit the latest needs of office, a periodical review should be undertaken.

One of the ways to ensure that the procedure laid down is being observed is to make a periodical inspection of the working of a section. The purpose of inspection should be to see to what extent the prescribed office procedure is being followed, the reasons therefore may be looked into as to whether the existing procedure needs improvement and, if so, in what respects. The purpose of inspection of a section can be said to be :

(i) to find out the state of affairs existing in each unit;
(ii) to see whether the prescribed procedure and instructions are understood properly and followed intelligently;
(iii) to find out whether proper attention is being paid to quality of performance by officers and staff during the discharge of their duties;
(iv) to test the intrinsic soundness and utility of the procedures and to get reliable data for planning improvements; and
(v) to know the deficiencies noticed in the existing procedures.

Periodicity of Inspection

Inspection of each section in a Ministry should b carried out at least once in a year. Previously, i Central Secretariat each section used to be inspecte half-yearly; but it was felt that inspection after si months was too early. The form of questionnaire wa thoroughly revised, a number of new points included and the periodicity fixed at one year.

However, supplementary inspections for all or an of the sections, with special reference to the nature o the work of the section (such as in Central Registry Establishment, Cash, General Sections, etc.) ca always be carried out, in addition to the annual genera inspection.

Surprise inspections can also be carried out i accordance with such instructions as the Secretary ma lay down.

Inspecting Authorities

Under the old orders, one of the half-yearly inspec tions was to be carried out by the Branch Officer i charge of the section concerned. The other half-yearl inspection used to be conducted by the Deputy Secre tary in-charge of the section, or the O & M Officer o the Under Secretary in-charge of O & M. In du course of time, the inspection by the respective Unde Secretary or Deputy Secretary of his own sectio became a mere formality, as he did not want to crit cise the working of a section under him. The inspec tion report became lukewarm and in fact, they, instea of pointing out the deficiencies in the procedure, con tained glorious compliments to the section as well a the officer in charge for giving proper guidance, train ing and for development of the requisite skills. I order to get an objective report, it has now been pr vided that, as far as possible, the inspection of section may be conducted by an officer of or abov the rank of Under Secretary who does not handle an part of the section's work. It is assumed that inspec tion by an officer, not connected with the section, ma correctly reveal the state of affairs existing in th section.

Programme of Inspections

The internal work study unit draws up an inspe

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ion programme, every quarter, for the approval of he Secretary. It indicates :

(i) the names of the sections to be inspected;
(ii) the names of the officers who would inspect them ; and
(iii) the months during the following quarter in which the inspection is to be carried out.

While drawing up the programme, the months of seasonal rush of work in a particular section, e.g. Accounts Section (s) during Budget Session of Parliament; Political Section during the Sessions of Parliament, etc., should be avoided for inspection. This will not dislocate the work of the section.

At the end of every quarter, the work study unit is to submit to the Secretary a report indicating whether the programme of inspection for the previous quarter was carried out.

Inspection Reports

The inspecting officer will endorse a copy of his report to :

(i) the Branch Officer concerned;
(ii) the Section Officer concerned; and
(iii) the O & M Officer

Action on the Report

The Section Officer will take all possible steps to rectify the defects pointed out in the report and submit a compliance report to the Branch Officer within three months. A copy of the compliance report will also be sent to the O & M Officer. The O & M Officer, after obtaining the comments of the Branch Officer, will submit the file to the Secretary. In addition, he will bring to the notice of the Department of Personnel & Administrative Reforms :

(i) deficiencies noticed in the existing procedures;
(ii) suggestions received for improvement of procedures and common to all deptts., together with his comments thereon; and
(iii) any other points of general application emerging from the inspection.

Points for Checking

There are several points that are usually ignored in a Section and it would be worthwhile to pay special attention to those points at the time of inspection. Some of these points may be listed as under :

(i) Is the Section having a list of subjects allotted to different sections in the Ministry?
(ii) Is there any Reference Folder, Standing notes, available in section?
(iii) Are the receipts diarised after a lapse of 15 days distinguished?
(iv) Whether file numbers are given against each diary?
(v) Whether "come back" cases entered in the Assistant's diary?
(vi) Whether new files opened have been indexed and if so whether under the appropriate heads?
(vii) Whether the name, designation and telephone number of the signatory on the office copy indicated?
(viii) Whether retention schedule for records maintained?
(ix) Whether previous and later references on the file covers indicated?
(x) How watch is being kept on disposal of important receipts?

The above list is only illustrative in nature and not exhaustive.

Quality of Disposal

(i) The quality of disposal is bound to improve if various aids to work are properly maintained and used in the disposal of the work. These may include the guard files, reference folders, reference books, standing notes, precedent book, etc. It is absolutely necessary for improving the disposal of work, in quantity, quality and speed, to maintain them in an upto-date form.

(ii) If two or more State Governments, etc., are to to be consulted simultaneously, the tabulation of replies should be started as replies begin to arrive and not held over till the receipt of all the replies.

(iii) It may be examined whether communications from MPs recognised associations, public bodies, etc. have been acknowledged suitably and final replies sent.

(iv) Whether drafts have been prepared in simple and straightforward cases or those of a repetitive nature for which standard forms communications exist?

(v) Whether draft has been put up without knowing the line of action even in cases involving policy matters?

(vi) Whether the staff is being properly guided by the supervisors and at higher levels? and

(vii) Whether the check lists for incoming and outgoing reports and returns are being maintained and whether the reports/returns are being submitted in time, etc., etc. □

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
December 7-11, 1987	Seventh Triennial International Conference on Thin Films, (ICTF-7)	To take stock of recent progress in the field of science, technology and applications of their films.	Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.	Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.
December 16-18, 1987	International Symposium on Electronic Devices, Circuits and Systems.	To provide a forum to research workers all over the world for exchange of information and technical perceptions in electronic devices, circuits and systems.	Indian Institute of Technology, Kharagpur.	Prof. N. B. Chakravarti, Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur-721302
December 18-19, 1987	National Conference on Role of Universities in Implementation of New Education Policy.	The Conference will focus on Management of Higher Education, Improvement in Efficiency and New Strategies in Higher Education vis-a-vis New Education Policy	Association of Indian Universities in collaboration with Osmania University, Hyderabad.	Dr. V. Natarajan, Project Director (Exams) Association of Indian Universities, 16, Kotla Marg, New Delhi-110002
December 23-26, 1987	XVI All India Conference of the Indian Association of Special Libraries and Information Centres (IASLIC)	To discuss the Challenges of the Emerging Information Society : National Policy Issues.	Sri Venkateswara University Library, Tirupati	Shri R. Sreepathi Naidu, Organising Secretary & Librarian, Sri Venkateswara University Library, Tirupati 517502
December 28-30, 1987	Third National Conference on Surfectants, Emulsions and Biocolloids.	To provide an opportunity to technologists and experts from academic and research institutions and industries to exchange views and discuss developments related to latest findings from active research.	Aligarh Muslim University in collaboration with Indian Society for Surface Science and Technology.	Dr. H.N. Singh, Reader, Department of Chemistry, Aligarh Muslim University, Aligarh.
December 28-31, 1987	33rd All India Library Conference	To discuss various aspects of modernisation in Libraries	Bharathidasan University in collaboration with Indian Library Association	Mr. A. Sundararajan, Organising Secretary, 33rd All India Library Association, Bharathidasan University Library, Tiruchirapalli 620023
February 5-6, 1988	National Seminar on Interaction between Institutions and Industries through Science and Technology Entrepreneurs' Parks	To provide a forum of young entrepreneurs, industrialists, scientists and educationists to deliberate on the vital issues of Industry-Institution interaction.	STEP, Roorkee and University of Roorkee, Roorkee	Prof. M.P. Jain, Organising Secretary, National Seminar IIISTEP, Office of the DRIL, University of Roorkee, Roorkee-247667
July, 12-14, 1988	International Symposium on Recent Advances in Male Reproduction	The Symposium will focus on Molecular Biology of Inhibin, Androgen Binding Protein Regulation of Fertility, Peptides in Testis Function and Steroidogenesis in Testis	University of Hyderabad in collaboration with the Indian Society of Andrology	Prof. P.R.K. Reddy, School of Life Sciences, University of Hyderabad, Hyderabad 500134
September 26-28, 1988	International Conference on Welding Technology in Developing Countries	To provide an opportunity to scientists and technologists from developing and advanced countries to share their experiences in the area of Welding Technology.	University of Roorkee, Roorkee.	Prof. P.C. Gupta, Organising Secretary, International Conference on Welding Technology in Developing Countries, Department of Mech. & Ind. Engg., University of Roorkee, Roorkee—247667

Group Discussion on Office Management

A group discussion on Office Management was organised by the Association of Indian Universities (AIU) at MONIRBA. Allahabad University from November 2 to 5, 1987. The group consisted of 38 senior university administrators like Controllers of Examinations, Deputy Registrars and Assistant Registrars from as many as 30 universities and institutions of national importance all over the country. Mr. Justice S.D. Agarwal of Allahabad High Court, who is a well known authority on U.P. Universities Act, inaugurated the discussion. He emphasised the necessity to mitigate litigations in educational institutions. He desired that the university administrators should be sympathetic towards the students and members of faculty as they are very sensitive people. They need a patient hearing of their grievances. He advised the university administrator to take decisions based only on principles of natural justice. They should invariably be given a fair chance of hearing and provided an opportunity to represent to higher university bodies. Maintenance of records also plays a vital role. He wanted the educational administrators to present their case before courts with full facts and detailed information so that the courts are well informed about the real issues. This will go a long way in getting the correct decisions from the courts on all academic issues.

Prof. Wahid Uddin Malik, Vice-Chancellor, Allahabad University, in his presidential remarks described the university as a vibrant organisation, where different sections have to be given due regard. The administrators should always have a feeling of deep commitment towards the educational institutions, he said.

Mr. Anjni Kumar, Joint Secretary, AIU, briefly mentioned the problems of training university administrators. This activity, undertaken by the Association recently, has been very well received by the universities. He said the universities are providing training for all the professions but it has somehow ignored to look to its own requirements. The result is that the administrators in universities have to climb up their own ladder and learn by job experience alone. There are no organised regular training programmes for them. The AIU is trying to fill this gap. It has already organised programmes for the Vice-Chancellors, Pro-Vice-Chancellors, Deans and senior faculty members, and Registrars. Now it is proposed to extend these programmes to other categories of university administrators like Controllers of Examinations, Finance Officers, Security Officers, etc.

He welcomed the Vice-Chancellor and members of the various Faculties of the Allahabad University and thanked the University Grants Commission (UGC) for providing liberal grants to meet travel expenses of the participants.

Prof. B. N. Asthana, Vice-Chancellor, Kanpur University and Prof. J.S. Mathur, former Head of the Department of Commerce & Business Administration, Allahabad University, participated in the panel discussion on 'Leadership Style and Motivation'. Prof. Asthana raised issues like whether the authority is inherent in the position of Vice-Chancellor or it has to be earned ? What leadership style should be adopted ? He felt that the inherent authority in the university was with the university bodies. He was also of the view that the leadership in the academic world has to be earned and sustained. A leader must always be on the run. According to him a leader has to be a dynamic person. In dealing with different situations, lines of communication should always be kept open. A sense of humour plays an important part in diffusing tensions.

Prof. W.U. Malik, VC, Allahabad University delivering the presidential address. Seated on his left are Dr. P.C. Sharma, Mr. Justice S.D. Agarwal, Dr. G.C. Agarwal and Shri Anjni Kumar, Joint Secretary, AIU.

Prof. J. S. Mathur was of the view that the leader should feel that he is an integral part of the organisation and the organisation belongs to him. It is only then that a leader can be successful. He felt that Gandhian style of leadership should be evolved. In his view the main cause of problems of Indian universities lies in socio-economic situation prevailing in the country and not in the organisation. His presentation was followed by a session on 'Motivational Aspects of Management'. According to Prof. Mathur, there are different kinds of needs—basic needs and psychological needs. He emphasised the personal touch in university administration.

Prof. Jagdish Prakash in his presentation on 'Office Management' emphasised the necessity of having a modern office as it is the nerve centre of any organisation. The basic function of an office is to provide correct and timely informotion so that right type of decisions can be taken. He was of the opinion that offices are not properly maintained and managed because the people who run these offices are not given proper recognition and status by the society. He felt that the office management can be improved considerably by proper decentralisation, delegation of authority and development of team spirit in the workers.

Dr. K. G. Virmani, Senior Fellow in the National Institute of Educational Planning and Administration (NIEPA) spoke on 'Time Management'. He stressed scientific management of time at the individual level and the departmental level. He referred to the use of various calendars like job calendar, section calendar, activity calendar and human suffering calendar. Management of personal time in office requires careful planning. Dr. Virmani emphasised the necessity of conserving time. He said that the time in office could be divided in terms of four kinds of activities—routine jobs, regular jobs, special work and productive work. The routine jobs should be delegated and a provision made for unforeseen special work. Some time should invariably be reserved for doing productive work. He quoted Murphy's Laws which are based on the following principles :

(1) Nothing is as simple as it looks;
(2) Everything takes more time than one anticipates; and
(3) If anything can go wrong then it will.

In the opinion of Dr. Virmani, time is wasted because of lack of work objectives, failure to delegate, failure to communicate, failure to plan and anticipate, and due to frequent interruptions in the work schedule. Taking 'importance' and 'urgency' was the criteria he drew a two by two table to conclude that :

(a) work which is low in importance and also in urgency should always be delegated;
(b) a work which is high in importance as well as in urgency should not be delegated;
(c) a work which is high in importance but low in urgency should be delegated to a highly responsible person; and
(d) a work which is low in importance but high in urgency should be delegated to a man of action.

Prof. G. C. Agarwal, Head, Department of Commerce & Business Administration and Dean, Faculty of Commerce, University of Allahabad also spoke on 'Time Management'. He felt that killing time is committing suicide and murder. Time is a valuable resource which is entirely different from other resources because it is irreplaceable. Hence time has to be managed efficiently and effect vely. For managing time, one ha to appreciate the shortage of tim at once's disposal. On the basi of studies made in universities, hospitals and educational institution he pinpointed the following cause for wastage of time : Telephon interruptions, unwelcome visitor unwanted delegation, attendin frequent meetings, lack of definit objectives, crisis management i.e time spent in solving crisis, and inability to say 'NO'. He said tha preventive measures could be adopted for plugging the leakage o time and suggested that time control chart should be prepared fo analysing time utilisation. Thi chart will reveal the various deviations due to controllable and uncontrollable factors. It is the former that calls for preventive measures. The nuisance value o interruptions can also be pinpointed. He said that the deviation in time control charts arise mainly due to the following reasons : (1) at the end of the day a large number of 'Must' have not been carried out while a large number of 'should' have been carried out; (2) Some of the priority tasks happen to be unpleasant and that is why one is hesitant in implementing them; (3) a difficult job, although urgent, is postponed; (4) one may be attracted to a particular type of work because of some interest. He suggested a self-disciplinary approach so that the priority tasks are given due importance even though they are unpleasant, difficult and uninteresting. He said that the time control chart enables everyone to differentiate between important and unimportant matters. Urgent matter is one which should be done immediately and important is one which cannot be postponed. Dr. Agarwal also dwelt on the problem of 'overloaded' and 'empty' plates. The former arises because of the technique of management by crisis which is different from crisis management.

Shri J.K. Jain while discussing the Forms of Communications underlined the importance of efficient communication. He was of the view that a good manager or administrator needs to be good communicator as well. Communication is a means of expressing or conveying feelings which may be classified as internal and external, formal and informal, oral and written.

Prof. B.S. Sharma, Pro-Vice Chancellor, Indira Gandhi National Open University spoke on the 'Management Information System'. He felt that MIS in universities is only operation control system which is person or activity specific and not system specific. As such MIS should not be regarded more than a tool to enable us to monitor the direction in which the organisation or the activity is moving. It should provide us information so that it enables us to become efficient and effective. Thus the concept of MIS in Educational Institutions should be an Action Concept. For introducing the MIS, he observed, that one should visualize at his own level what information he needs. He recommended that the system should satisfy the norms of criticality and controllability of mixed information i.e. quantitative as well as qualitative. The volume of information should be manageable and timeliness in MIS should be observed so that corrective actions may be taken to convert data into information.

Prof. J.S. Mathur, while dealing with 'Interpersonal Relationship' narrated numerous anecdotes from the life of Gandhiji and other personalities. He observed that communications of objectives should be specific and for that one has to touch the felt needs of the people. The problems must be reduced to the level of people to whom one is talking; and the role of the Informed Groups in the organisation has to be assessed. For interpersonal relationship, congenial, and homely environment has to be built and in building this the role of the top man in the institution cannot be over-emphasised.

Dr. S.P. Singh, who dwelt on the Leadership Style and Motivation, observed that there is no short cut to leadership because it is the ability of the manager to induce his subordinates and followers to work for the accomplishment of the organisational objectives with zeal and confidence. He observed that leadership has two important functions—to invent and use appropriate motivators for the subordinates and to inspire the followers and imbue them with a sincerity of purpose. Most of the leaders have failed to inspire because there is a yawning gap between their rhetoric and record, and (2) leaders create cliques among subordinates—'our man is the rignt man, although right man may not be our man'. Dr. Singh suggested that we should adopt tools to the problem and not the problem to the tool.

Dr. P.C. Sharma, in his presentation on 'Evaluation and Plan of Action' tried to differentiate between management of business and management of institutions. He felt that service institutions are real growth sectors in the modern society. As such the performance of educational institutions cannot be measured in economic terms. He was of the view that performance of educational institutions has not been very impressive. The main reason is that our managers are not business like. By and large the educational institutions are not cost conscious. They lack effectiveness. In educational institutions, the targets are not clearly defined and the objectives are not very clear. Therefore priorities cannot be properly laid and deadline cannot be formulated.

Shri S. R. Joshi, Deputy Director, Institute of Secretarial Training & Management (Personnel), New Delhi in his presentation on Office Management and Work Improvement emphasised the value of checks and balances. He was of the view that paper management is very important in any office. The main function of an efficient office is collection, compilation, processing and presentation of information and finally communication of the decisions. He was of the view that checks have to be exercised at every point right from the receipt of dak to the filing system and presentation of information. In his opinion there are two types of delays : (1) Submission delay, and (2) Process delay. He illustrated them by giving the example of weekly arrears statement and also case sheets. He also discussed the problem of work improvement and inspection and talked of communication skills and attitudes for work improvement. He felt that the maintenance of standing Guard File, Precedent Book and Standing Note may be very helpful.

Dr. K.K. Bhutani, Head, Department of Electronics and Computer Centre, University of Allahabad, spoke on the utility of computers and explained the computer terminology. His presentation was properly illustrated with numerous charts, diagrams and slides. He also spoke on different types of computers being used in India and pleaded for their effective use in the university system.

Prof. W.U. Malik, Vice-Chancellor, University of Allahabad in his valedictory address stressed the importance of the work of university administrators and pleaded for their strong commitment to their jobs. He distributed the Certificates and souvenirs to the participants. ☐

IIT—Industry Nexus

The private sector and the Indian Institutes of Technology (IITs) are reported to have embarked on a major co-operative venture to realise the unutilised potential in technology development. Key areas identified for joint action include research and development, personnel exchange and setting up of university-industry foundations and technology parks.

The proposal is understood to have been discussed at a recent meeting of the chairmen and directors of IITs with the representatives of the Confederation of Engineering Industry (CEI) and it has been decided to constitute joint task forces on specific areas such as energy conservation, environment protection and pollution control, new materials, system engineering, low-cost automation, technology scanning and foreign collaborations, reliability and maintenance engineering. These task forces will report on the approach to be adopted in these areas to another meeting of chairmen and directors of IITs with the CEI members to be held soon.

It was decided that IITs will enter into a memorandum of understanding with CEI to formalise the co-operation in research and development.

The meeting noted that the 2,000-strong IIT faculty is not being properly utilised by the industry. It was felt that the industry will benefit by using the research and development expertise available with the faculty, including the resources for scanning and assessment of technologies. A joint effort will help create a formidable technology data bank for use by the industry.

It was proposed that industries should provide two/three months' exposure to select faculty members to discuss industry problems. A similar exchange for industry representatives will be useful to communicate and establish a rapport with the institutes.

The meeting also discussed a proposal for a group of industries setting up R & D facilities in the institutes, which can be used by both.

It was decided that an apex group of CEI-IIT representatives will review and develop an action plan to set up industry foundations in the institutes.

Development of Self Instructional Material

Prof. G. Ram Reddy, Vice-Chancellor of Indira Gandhi National Open University called for close-knit co-ordination between the open universities of the country for maintenance of high standards in distance education. He was inaugurating a six-day workshop on Development of Self-Instructional Material organised by the Andhra Pradesh Open University in collaboration with the Indira Gandhi National Open University. Prof. Ram Reddy, stressed the need for constant interaction between various open universities so as to avoid duplication of courses.

Presiding over the function, the Vice-Chancellor of Andhra Pradesh Open University, Prof. C. Narayan Reddy said that the university had decided to offer courses in Kuchipudi dance and carnatic music. The courses would begin by the end of next year. He urged the participants to be innovative in approach, while developing self-instructional material for distance education. The material has to be so devised as to enable effective self-study, particularly by students in isolation, as majority of them are adults drawn from different social, occupational and educational backgrounds, he explained.

The workshop was intended to acquaint the teachers with the techniques of multi-media material production. The resource persons for the workshop were drawn from the Indira Gandhi National Open University and the International Extension College of London.

Over 50 teachers who were full time staff of the A.P. Open University attended the workshop.

Advanced Computer Centre for Pune

A Centre for Development of Advanced Computing Technology (C-Dact) will be set up in Pune at a cost of Rs. 37 crore. This was announced by Shri K.R. Narayanan, Union Minister of State for Science and Technology in Lok Sabha recently. The project would be completed in 3 years time.

He said there was also a proposal for development of a parallel processing computer for special applications by Tata Institute of Fundamental Research (TIFR) and Centre for Development of Telematics (C-Dot).

Mr. Narayanan said the Government was also setting up a network of computer centres called NIC net in all the State capitals/Union Territories and district headquarters to create information processing facilities for use by both States and Central Government departments.

Each district centre would cost about Rs. five lakh including the computer and earth station for satellite link. The State level computer centres would cost Rs. 80 lakh each. The total financial involvement for setting up the network (NIC net) is Rs. 120 crore.

Symposium on Radiation Physics

Dr. P. K. Iyengar, Director of the Bhabha Atomic Research Centre (BARC); said the living standards of people could be improved only by giving priority to science education in the country. Dr. Iyengar, who is also President of the International Radiation Physics Society said that Radiation Physics covered a whole spectrum of science, and nuclear science was the most fundamental sector. They had to investigate why the atom, gold and uranium were created in the universe and their contribution to society. Dr. Iyengar was inaugurating the Seventh National Symposium On Radiation Physics at the Mangalore University.

He said discoveries in science were a continuing process and youngsters, specially in universities, had an important role to play in experimental discoveries. He stressed the need for more interaction between disciplines which were not directly connected with Radiation Physics, for better results.

Scientists from Yugoslavia, Japan and the US, besides a large number from all over the country, participated in the five-day symposium.

Peace Messenger Award for Gujarat Vidyapith

The Peace Research Centre of Gujarat Vidyapith was recently presented the United Nations' "Peace Messenger Award". The Award was given in recognition of the important contribution the Gujarat Vidyapith made to the programme and objectives of the International Year of Peace which was celebrated all over the world last year. The presentation ceremony was held at Ahmedabad in the presence of Dr. Bhaichand Patel, Director of the United Nations Information Centre, Delhi who presented the award to Prof. Ramlal Parikh, Vice-Chancellor on behalf of Javier Perez de Cuellar, the Secretary-General of the United Nations. Receiving the Award Prof. Ramlal Parikh said that the United Nations, by conferring such an Award to the Gujarat Vidyapith, had recognised the significance of Gandhian values and ideals. He also shared his experience of the U. N. meeting on 'Disarmament and Development' held in September, 1987.

Speaking on the occasion Dr. Bhaichand Patel referred to the major global problems of our time mainly nuclear arms race, regional and local conflicts, the deadly effects of disease and poverty, and the misery of famine and drought. He said that United Nations was trying to solve these problems. What we required was the harmonized relations between nation-states to mobilise the resources and knowledge to solve these problems.

Mr. Vinod Tripathi, Registrar of Gujarat Vidyapith welcomed the chief guest while Professor D.N. Pathak gave the broad outline of activities of Peace Research Centre, since its inception in 1971. These include conducting workshops, seminars and lectures, teaching and research, publication, and Library collection.

National Convention of Computer Engineers

The Second National Convention of Computer Engineers was held recently at Bangalore under the auspices of Institution of Engineers (India), Karnataka State center. In the inaugural session Dr. P.K. Patwardhan, Chairman, Computer Engineering Division, Institution of Engineers (India) and Head, Computer Division and Chairman, Technology Transfer Group, Bhabha Atomic Research Center, Bombay, spoke on 'Take-off in the 21st century with High-Tech. for social change'. In his address he touched on the serious problems of manpower shortage in the field of computer and suggested possible solutions to overcome this problem in the near future. Dr. V. Rajaraman, Professor, Indian Institute of Science, Bangalore delivered the keynote address on 'Super Computers'.

Papers were presented at four technical sessions, viz., Quality and Reliability; Reliability and Engineering Applications; Computer System; and Engineering and Design Applications. Besides a workshop on 'Computer Simulation' and an exhibition of computer products were also organised on the occasion.

High Grade Clays

Very High Grade (Grade I, I.S.I.) clay deposits comparable to Amazan (Brazil), Georgia (U.S.A.), and Basaria (W. Germany) have been discovered in the vicinity of approx. 1.5 kilometers north of Masudpur Village and 1 km. South of Basant Gaon in New Delhi. According to the field survey and laboratory investigations, carried out by the Indian Institute of Technology Delhi, the deposits may have a vast potential deposit for future exploitation for use in medical, textile, rubber, paper, paint, plastic and ceramic industries. Subjected to proper levigation and beneficiation, it would prove to be a very high grade clay so far not found in Delhi Area.

The discovery has been reported in a paper entitled "High Grade Clays of Delhi-Kusumpur Clay, Mining Area" by Prof. P. Kumar of the Department of Civil Engineering published in "**Indian Potter**" of Indian Potteries Association, Calcutta.

Staff College for Gauhati Varsity

An Academic Staff College is proposed to be set up at Gauhati University during 1987-88. The University Grants Commission (UGC) is stated to have approved the proposal of the University in this regard. The proposed college will serve the Universities of Assam and Manipur.

News from Agril. Varsities

New Grain Variety

The National Bureau of Genetic Plant Research's regional station at Shimla has developed a high-yieding, drought resistent variety of grain called Annapurna. The new variety is a result of 12 years of research by two senior scientists, Mr. B. D. Joshi and Mr. T. A. Thomas.

Annapurna holds great promise for hilly regions as it is suited for the harsh conditions of the hill. It can be grown in rainfed areas as well as droughtprone areas of plains with less than 200 mm of rainfall. It gave an average yield of 22.3 quintals per hectare after tests carried out in Shimla, Almora, Solan and Shillong, from 1982 to 1986.

It is highly nutritious (14.5% protein) and is a rich source of lysine. It germinates five times and can be stored for 50 years without any loss of quality. No pest has been observed on the seed even after prolonged storage.

A combination of Annapurna with other grains like wheat and maize gives even better protein than milk. The leaves of the plant are edible and rich in protein, iron and vitamins A and C.

It can be used for products like bread, pastries and biscuits. It can also be used for producing high quality starch, dyes and laxatives. Squalance—an expensive material, normally obtained from shark liver and widely used in the cosmetic industry—has also been found in the new grain.

News from Abroad

New Course for Genetic Engineers

Monash University in Melbourne proposes to introduce a Master of Biotechnology (MB) degree course from the current academie session. The course will teach genetic engineering and other bio-technology techniques, as well as methods of applying the technology to industry, medicine, agriculture, engineering and other fields. The curriculum also will include analyses of the impact of biotechnology on industrial management and legal and ethical issues of the technology.

The course seeks to train graduates who are embarking upon a career in biotechnology and to educate working professionals in the potential of the subject. It will also build upon the expertise in biotechnology which already exists at Monash and will complement the work of biotechnologists at the Commonwealth Scientific and Industrial Research Organization.

The MB degree is offered to honours graduates in science or engineering as a year-long full-time course, with provision to take two years to complete, if necessary.

Karnataka Studies Programme

The University of Iowa, USA, is contemplating to start a 'Karnataka studies programme', to give an impetus to the study of Kannada language and literature in that country. Outlining the programme Prof. Sheldon Pollock, Head of the Iowa Asian Language, Literature and Religious Studies Department, said that details regarding the establishment of an endownment chair in Kannada and exchange programmes were being worked out

Student and staff exchange programmes with higher education institutions in Karnataka and offering of Fellowships to American and European students to study Kannada are also envisaged in the three-year programme.

Prof. Pollock, who had discussions with the Chief Minister, Mr. Ramakrishna Hegde, on the programme, said the State Government had offered to contribute Rs. 2.5 lakh US dollars for the chair for which 1.2 million dollars were required.

Golden Heart for Swaminathan

Dr. M. S. Swaminathan, Direc-r General of the International ice Research Institute (IRRI) as recently presented the Golden leart Presidential Award for his utstanding role in strengthening RRI as a source of knowledge and xpertise to further agricultural cience; his support in the establish-ient of the Philippine Rice Re-earch Institute (Phil Rice); the nitiation of technology transfer vorkshops for the exchange of ideas ind information between the Department of Agriculture and IRRI; and the expansion of IRRI's capacity for "upstream research" to bring the fruits of recent advances in science and technology to Asian rice farmers.

The National Academy of Science and Technology of the Philippines (NAST) also honoured Dr. Swaminathan as the first laureate of the World Food Prize. Pattterned after the Nobel Prize the World Food Prize was established this year by the General Foods Fund to recognise those who have made outstanding contribution to global food security.

Dr. Swaminathan is understood to have converted his cash award of $ 200,000 to a special fund for several projects designed to link small farmers and agricultural scientists. One project will be the production of mushroom culture spawn to enable women from landless-labour families in Pangasinan, Philippines to grow mushrooms on rice straw compost.

The award was presented to Dr. Swaminathan by the Philippines President, Mrs. Corazon Acquino. He is the first foreigner to be conferred the prestigious award by the Philppines administration.

TWAS Awards 1986

The Third World Academy of Sciences has announced awards for the Basic Sciences in the fields of Physics, Chemistry, Biology and Mathematics for the year 1986. The recipients of the Awards are :

Physics : Prof. Zhong-xian Zhao, China, for his fundamental and pioneering contributions to high temperature superconductivity, in particular for achieving the superconductivity above liquid nitrogen temperature in Ba-Y-Cu-O system.

Chemistry: Prof. Saad S. M. Hassan, Egypt, for his fundamental contributions to Modern Analytical Chemistry, in particular for developing new simple and selective micromethods for the analysis of pharmaceutical and biomedical compounds.

Biology : Prof. Mysore Ananthamurthy Viswamitra, India, for his fundamental contributions to the understanding of DNA Structure, in particular for his discovery of sequence dependent fine structure in DNA segments in single crystals.

Mathematics : Prof. Mauricio Matos Peixoto, Brazil, for his fundamental and pioneering study of structural stability of dynamical systems, in particular for proving that flows on closed surfaces are generically structurally stable.

Each award consists of a prize amounting to US $ 10,000 as well as a medal on which major contributions of the Award winner will be mentioned.

Sports News

Varsities Football Team

Calicut's Student to Lead

K. Surendran of Calicut University has been named as the Captain of the Indian Universities Football Team which was selected at three-day selection trials organised at Burdwan University. Other members of the team are: Baburaj C.K. (Calicut); Sanjay Anand (Delhi); Harikrishnan S. (Gandhiji); Siba Prasad Deb (North Bengal); Mathew Varghese (Calicut); Harish Chander (Delhi); V.M. Mohammed Azeem (Gandhiji); Abhishek Ghosh (Burdwan); Vijay Dasrath (R.D. University); Liston C.A. (Calicut); Satish Kumar (Jiwaji); Mohamed Sajid P. K. (Kerala); Debabrata Ghosh (Kalyani); Kishore Kumar K.C. (Sri Venkateswara); and Hardhan Saha (North Bengal).

The team is at present under training at Burdwan University under the supervision of Mr. R.N. Bhattacharya, Football Coach. It will play against Ex-International XI comprising former National Football players who have represented the country in various International events. The match is being organised as part of the celebrations of the 40th year of Indian independence.

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

CURRENT DOCUMENTATION IN EDUCATION

A List of Select Articles culled from Periodicals received in the AIU Library during October, 1987.

EDUCATIONAL PHILOSOPHY

Partington, Geoffrey. The concept of progress in educational thought ; Instrumentalist theories considered. *Oxford Rev. Edn.* 13(2), 1987, 141-49.

EDUCATIONAL PSYCHOLOGY

Barer-Stein, Thelma. Learning as a process of experiencing the unfamiliar. *Studies Adult Edn.* 19(2), 1987, 87-108.

Bharadwaj, Khazan Singh. Humour in the Indian classroom : A study of classroom situations and materials. *Ind Dissertation Abstracts* 15(3) 1986, 324-27.

Calderhead, James. Developing a framework for the elicitation and analysis of teachers' verbal reports. *Oxford Rev. Edn.* 13(2), 1987, 183-89.

Entwistle, Noel. Motivation to learn : Conceptualisations and practicalities. *British J Ednl Studies* 35(2), 1987, 129-48.

Highhouse, Scott and Doverspike, Dennis. The validity of the learning style inventory 1985 as a predictor of cognitive style and occupational preference. *Ednl. Psy Measurement* 47(3), 1987, 749-53.

Jain, M.C. The interactive effects of first and second order personality factors, educational interests and sex on scholastic achievement (with special reference to Deviant Adolescents). *Ind Dissertation Abstracts* 15(3), 1986, 383-86.

EDUCATIONAL SOCIOLOGY

Palmer, Parker J. Community, conflict, and ways of knowing : Ways to deepen our educational agenda. *Change* 19(5), 1987, 20-5.

EDUCATIONAL PLANNING

Alexander, D.J. Rural development : Educational needs and resources. *Studies Adult Edn.* 19(2), 1987, 137-44.

EDUCATIONAL ADMINISTRATION

Lane, Jan-erik. Against administration. *Studies Hr. Edn.* 12(3), 1987, 249-60.

EDUCATIONAL RESEARCH

Khattab, Ali-Maher. Transformation abilities : A reanalysis and confirmation of Soi theory. *Ednl. Psy Measurement* 47(3), 1987, 597-606.

CURRICULUM

Becher, Tony. Disciplinary discourse. *Studies Hr. Edn.* 12(3), 1987, 261-74.

TEACHERS & TEACHING

Buchmann, Margret. Teaching knowledge; the lights tha teachers live by. *Oxford Rev. Edn.* 13(2), 1987, 151-64.

Leftwich, Adrian. Room for manoeuvre : A report on periments in alternative teaching and learning methods in litics. *Studies Hr. Edn.* 12(3), 1987, 311-24.

Ramsden, Paul. Improving teaching and learning in higher lucation : The case for a relational perspective. *Studies Hr. dn.* 12(3), 1987, 275-86.

Tribe, Diana M. and Tribe, A.J. Law-teach : An interctive method for effective large group teaching. *Studies Hr. dn.* 12(3), 1987, 299-310.

Wagner, Jon. Teaching and research : As student responsiilities. *Change* 19(5), 1987, 26-35.

EDUCATIONAL TECHNOLOGY

Entwistle, Noel and others. Anticipating the experience of igher education through computer simulation. *Hr. Edn.* 6(3), 1987, 337-55.

Fisher, Francis Dummer. Higher education Circa 2005 : More higher learning, but less college. *Change* 19(1), 1987, 40-45.

Lunneborg, Clifford E. Bootstrap applications for the behavioral sciences. *Ednl. Psy Measurement* 47(3), 1987, 627-29.

EVALUATION

Ball, Robert and Halwachi, Jalil. Performance indicators in higher education. *Higher Edn.* 16(4), 1987, 393-405.

Bannister, Brendan D and others. A new method for the statistical control of rating error in performance ratings. *Ednl Psy Measurement* 47(3), 1987, 583-96.

Ewell, Peter T. Assessment ; Where are we ? *Change* 19(1), 1987, 23-34.

Luecht, Richard M. Test PAC : A program for comprehensive item and reliability analysis. *Ednl Psy Measurement* 47(3), 1987, 623-26.

Magnusen, Karl O. Faculty evaluation, performance and pay : Application and issues. *J. Higher Edn* 58(5), 1987, 516-29.

Marsh, Herbert W. Students' evaluations of university teaching : Research findings, methodological issues, and directions for future research. *Ednl Res* 11(3), 1987, 257-388.

Sadler, D. Royce. Specifying and promulgating achievement standards. *Oxford Rev Edn* 13(2), 1987, 191-209.

Spangehl, Stephen, D. The push to assess : Why it's feared and how to respond. *Change* 19(1), 1987, 35-9.

Tiberius, Richard G. and others. A comparison of two methods of evaluating teaching. *Studies Hr Edn* 12(3), 1987, 287-98.

Yonker, Robert J. The high school and beyond cognitive test : Evidence of criterion-related validity. *Ednl Psy Measurement* 47(3), 1987, 719-24.

ECONOMICS OF EDUCATION

Adiseshiah, Malcolm S. Linking higher education and employment. *Bull Madras Development Seminar Series* 17(10), 1987, 515-18.

Hannah, Leslie. Human capital. *Oxford Rev Edn* 13(2), 1987, 177-81.

SCIENCE EDUCATION

Byrne, Michael S and Johnstone, Alex. H. Critical thinking and science education. *Studies Hr Edn* 12(3), 1987, 325-40.

ADULT EDUCATION

Draper, James. Universities and non-formal adult education. *Convergence* 19(3), 1986, 70-5.

Duke, Chris. Relationship between adult education and poverty. *Convergence* 19(4), 1986, 1-20.

Grossi, Francisco Vio. From Project bureaucracy to the flourishing of life : Elements for a new relationship in financing adult education. *Convergence* 19(4), 1986.

Stromquist, Nelly. Empowering women through education : Lesson from international cooperation. *Convergence* 19(4), 1986.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Kondakov, Mikhail I. The road to educational reform in the USSR. *Prospects* 17(1), 1987, 27-35.

Moses, Ingrid. Educational development units : A cross-cultural perspective. *Higher Edn* 16(4), 1987, 449-79.

Silius, Harriet. A comparative perspective on Finnish higher education policy. *Higher Education* 16(4), 1987, 417-32.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Anthropology

1. Guha, Kamalesh. *The crossbow complex in tribal culture : A study in historical anthropology.* Calcutta.

Marine Biology

1. Chandra Prabha, A.C. *Studies on oxygen minimum layer in the Arabian sea in relation to the oceanic circulation.* CUST. Dr. G.S. Sharma.
2. Joseph, Elizabeth. *Studies on histological and biochemical changes during spermatogenesis in Mugil Cephalus Linnaeus and related species.* CUST. Dr. P. Vedavyasa Rao.
3. Joseph, M.G. *Studies on mixed layer depth in the Arabian sea.* CUST. Dr. D. Srinivasan.
4. Kandoran, M.K. *Transfer of technology in the fish curing industry in India.* CUST. Dr. C.T. Samuel.
5. Krishnan, Anuradha. *Studies on larval nutrition in the pearl oyster, Pinctada fucata Gould.* CUST. Dr. K. Alagarswami.

6. Sarala Devi, K. *Effect of industrial pollution on the benthic communities of a tropical estuary.* CUST. Late Dr. R.V. Unnithan.

7. Subhash Chander. *Studies on ecopysiology of Penaeus indicus H. Milne Edwards in the grow-out system.* CUST. Dr. A.D. Diwan.

8. Thampuran, Latha. *Physiological effects of copper (II) on Sunnetta scripta L.* CUST. Dr. R. Damodaran and Dr. P.N. Krishnan Nambisan.

Environmental Sciences

1. Susarla, S. Kanaka Valli. *Effect of some toxic metals on selected phytoplankton of Kerala waters.* CUST. Dr. K.P. Balakrishnan.

Microbiology

1. Aggarwal, Ram Paul. *Isolation of protease deficient mutants of Pseudomonas aeruginosa : Pleiotropic changes in extra-cellular toxins.* PAU.

Biochemistry

1. Alivelu Manga, V. *Phytochrome mediated-β-amylase activity in mustard, Sinapis alba L. cotyledon.* Hyderabad. Dr. R.P. Sharma.

2. Ananda Krishnan, V. *Studies on the origin of message site of synthesis and catalytic characterization of certain photosynthetic enzymes.* Madurai.

3. Subbaramaiah, K. *β-amylase from mustard, Sinapis alba cotyledons : Purification, molecular characterisation and photoregulation during seedling development.* Hyderabad. Dr. R.P. Sharma.

Botany

1. Annie, P.T. *Genetic studies in rice, Oryza sativa Linn.* Calicut. Dr. K. Pavithran.

2. Bhargava, Roma. *Regulatory role of GA_3-receptor protein in the post-translational control of acid phosphatase activity in germinating embryos of cotton, Gossypium hirsutum: Purification and characterization of GA_3-receptor protein and acid phosphatase enzymes.* Delhi.

3. Bhuskute, Shriram M. *Embryological, histochemical and in vitro culture studies in the Cucurbitaceae.* Nagpur. Shri B.K. Deshpande and Shri P.H. Makde.

4. Das, Rina. *Role of calcium and calmodulin in higher plants.* JNU. Prof. S.K. Sopory.

5. Jhansi Lakshmi, Kowluru Venkata. *Studies on cross protection of blast disease on three Poaceae.* Andhra.

6. Kadam, Sukhadeo Dinkar. *Studies on pollution in the estuarine ecosystems.* Shivaji. Dr. (Smt.) L.J. Bhosale.

7. Katare, Daya Shanker. *Genetic analysis of metric and quality attributes in tomato.* HS Gour. Prof. K.M. Vyas.

8. Khanna, R.K. *Standing state of nutrition in different forest ecosystems of Kumaun Himalaya.* Kumaun. Dr. S.P. Singh.

9. Mukhopadhyay, Durgadas. *Studies of the Oedogoniales of West Bengal.* Burdwan. Dr. Pranjit Sarma.

10. Nagaraja, T.G. *Cytological, developmental and pathophysiological studies of some Indian fungi.* Shivaji. Dr. A.N. Thite.

11. Palarpawar, Maroti Yadaorao. *Studies on epiphytotics with special reference to leaf spot disease of turmeric, Curcuma longa L. caused by Colletotrichum spp.* Amravati. Dr. V.R. Ghurde.

12. Pandey, D.K. *Evaluation of some systemic and non-systemic fungicides for their efficacy in controlling foliar and seed borne diseases of barley.* Kumaun. Dr. B.S. Mehrotra.

13. Pushpa, Kurella. *Cytomorphological studies in the genus Pennisetum and chemical mutagenesis in Pennisetum typhoides (Burn) S & H.* Andhra.

14. Rathore, Rajendra Singh. *Biodegradation of keratin : Physiological and biochemical studies of keratinophilic fungi and related dermatophytes from the soils of Madhya Pradesh.* HS Gour. Dr. S.C. Agrawal.

15. Sharma, Mani Shanker. *Effect of growth regulators and retardants on growth, sex expression and yield of bottle gourd, Lagenaria siceraria (Molina) Standl.* Ravishankar. Dr. M.L. Sonar.

16. Sreenivasa Rao, Kottapalli. *Ecophysiological attributes of bamboo forests in successional communities in North Eastern India.* NEHU. Dr. P.S. Ramakrishnan.

17. Verma, Akhila Nand. *Studies on the physiology and biochemistry of seed germination of some forest trees of North East India.* Dr. P. Tandon.

18. Yumnam, Dilrani Devi. *Physiological studies on spores (akinetes) of the blue-green alga, Nodularia spumigena.* NEHU. Dr. P.M. Reddy.

Agriculture

1. Bhupender Kumar. *Genetic studies of test crosses involving indigenous and exotic germplasms of maize, Zea mays L.* HP Krishi. Dr. S.K. Bhalla.

2. Chate, Vaijnath Kondiba. *Testing a model of agricultural development and rural change in the irrigated command area, Maharashtra.* Marathwada Agrl. Dr. G.K. Sangle.

3. Deepak Kumar. *Studies on crop responses and soil properties as influenced by long term fertiliser experimentation in acid alfisol of Himachal Pradesh.* H.P. Krishi. Dr. S.K. Bishnoi.

4. Durga Singh. *Toximetric studies of systemic fungicides against Glomerella cingulata (Ston.) Spauld and Schrenk, causing bitter rot of apple.* Y.S. Parmar. Dr. J.L. Kaul.

5. Ganguli, Dilip Kumar. *Studies on maize germplasm complexes by live X tester analysis.* Birsa Agrl.

6. Kasar, Dnyandeo Vitthal. *A study of economic aspects of seasonal migratory agricultural labour working with cooperative sugar factories in Pune District, Maharashtra.* MP Agrl. Dr. R.G. Patil.

7. Medhi, Rajendra Prasad. *Effect of macro and micro nutrients on curd yield, quality, seed yield and disease incidence in cauliflower, Brassica oleracea L. var. botrytis.* YS Parmar. Dr. A.K. Singh.

8. Nadre, Keshav Ramrao. *A study of attitude, aspiration and preference for placement of agricultural school students in rural Maharashtra.* Marathwada Agrl. Dr. M.G. Bhilegaonkar.

9. Neog, Amiya Kumar. *Studies on root growth in tea.* Dibrugarh. Dr. P.C. Bora.

10. Thakur, Vijay Singh. *Studies on the effect of fungicides on apple scab, Venturia inaequalis (Cke.) Wint pathogenesis.* YS Parmar. Dr. G.K. Gupta.

11. Varadachari, Chandrika. *Release of potassium from potash bearing silicate minerals.* Calcutta.

Zoology

1. Adolph, Clement. *Studies on oribatid mites (Acarioribatei) of Malabar*. Calicut. Dr. M.A. Haq.
2. Antony, R. *Electro physiological studies on the chemo receptors of the intestine and liver*. Manipur. Dr. N.H. Hazarika.
3. Aziz, Chhaya. *Histochemistry of trematodes*. Durgawati.
4. Bhakat, Somnath. *Studies on the grassland millipede, Streptogonopus phipsoni Pocock (Polydesmida; Pratinidae)*. Burdwan. Dr. M.C. Mukhopadhyay.
5. Bhattacherjee, Reba. *Studies on caryophyllidean cestode parasites of some catfishes and histopathology of the host*. NEHU. Dr. (Mrs) V. Tandon.
6. Krishnakumar, R. *Studies on the spermatheca of some decapod crustaoeans*. Calicut. Prof. K.G. Adiyodi.
7. Lakshmi, Kadiyala. *Osteology, interspecific hybridization and fishery of some Indian arid catfishes with observations on phylogeny of siluroids*. Andhra.
8. Pranab Nath. *Systematic distribution and ecology of ichthyofauna of Arunachal Pradesh with paticular reference to the limnology of Itanagar lake*. Gauhati. Dr. S.C. Dey.
9. Rajput, Kailash Babu. *Studies on the mosquitoes (Diptera: Culicidae) of Manipur*. Manipur. Dr. T. Kameshwar Singh.
10. Rao, V.V.S.N. *Interaction of chemical pollutant malathion with nontarget organisms in laboratory and in natural waters*. Kumaun. Prof. R.S. Tandon.
11. Shakuntala, Avaladasu. *Studies on haemolymph aminoacids, histology and histochemistry of digestive, nervous and reproductive systems of Mylabris discoidens Say (Insecta: Coleoptera)*. Andhra.
12. Sharma, Ashu. *A study of the possible existence of multiple forms of bovine seminal plasma inhibin*. Delhi.
13. Singh, U.P. *Limnology of fish ponds in relation to fish culture*. Kumaun. Dr. J.S. Bisht.
14. Sinha, S.P. *Ecology of wild life with special reference to the lion, Panthera leo persica in Gir Wild Life Sanctuary, Saurashtra, Gujarat*. Saurashtra. Dr. R.M. Naik.
15. Trinadha Babu, Baddireddy. *Some histophysiological and biochemical studies on the edible crab, Portunus sanguinolentus Herbst (Portunidae) from Andhra Coast*. Andhra.
16. Warikoo, Pradeep Kumar. *Studies on the reproductive processes in male steroid-spermatozoa interactions in relation to sperm functions*. Delhi.

Medical Sciences

1. Ganapathy, Seru. *Phytochemical and biological studies on some plants of Verbenaceae and Apocynaceae*. Andhra.
2. Mali, Abha. *Toxicological and pharmacological studies with some indigenous plants of Bastar Region of Madhya Pradesh*. HS Gour. Dr. H.S. Maheshwari and Dr. D.D. Santani.
3. Mukherji, Gour. *Development of drug dosage forms containing 5-fluorouracil*. Delhi.
4. Vivekananda Reddy, Biyyam. *Effect of amniotic fluid on blood coagulation*. Shivaji. Dr. S.K. Ganeriwal.

Animal Husbandry

1. Parhi, Nabin Kumar. *Pathology and pathogenesis of Clostridium perfringens type-D epsilon (e) toxin in goats*. Birsa Agrl.
2. Sinha, Abhay Kumar. *Studies on Yersinia enterocolitica*. Birsa Agrl.

SHASTRI INDO-CANADIAN INSTITUTE
FACULTY ENRICHMENT GRANTS

The Shastri Indo-Canadian Institute with the support of the Department of External Affairs of Canada is pleased to announce the availability of Faculty Enrichment Grants to Indian scholars.

The general purpose of the Grants is to advance knowledge and understanding of Canada in Indian universities by facilitating visits of Indian scholars to Canada for academic contacts and exchange, and development of courses in Canadian Studies.

ELIGIBILITY: Established academics in Indian universities (1) interested in promoting Canadian Studies in their institutions, (2) with demonstrated accomplishments in their own areas of speciality, (3) who now wish to expand their speciality to include Canada.

The applicants are expected to submit a proposal indicating how their visit to Canada would enrich their area of speciality and the expected contribution to the promotion of Canadian Studies in India they will make upon returning.

TENURE: The Enrichment Grants may be held for a period of not less than 3 and not more than 5 weeks in Canada.

AWARD: The award includes international travel and weekly allowance.

Applications, which must include a detailed bio-data and proposal (seven copies each) must reach the Shastri Indo-Canadian Institute, 92 Golf Links, New Delhi-110003 not later than December 31, 1987.

CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF CALICUT

[G&A II 'C' SECTION]

Calicut University P.O.

No. GA II C/11443/86 **Dated : 16-10-1987**

NOTIFICATION

Applications are invited from qualified candidates for appointment to the undermentioned posts in the University.

Sl. No.	Name of the Department	Category	No. of Posts	Nature of Vacancy	Reservation, if any	Specialisation for the post, if any
1.	Life Science	Reader [Bio-Chemistry]	1	Temporary	ETB	Bio-Chemistry
2.	School of Drama	(a) Assistant Director [Renotification]	1	Peramanent	ETB	
		(b) Lecturer [Renotification]	1	Permanent	ETB	Direction
3.	Malayalam	(a) Reader	1	Permanent	ETB	
		(b) Lecturer	1	Permanent	OPEN	
4.	Anthropology	Reader [Renotification]	1	Permanent	OPEN	Regional Tribal Aspects.
5.	Psychology	Reader [Renotification]	1	Permanent	OPEN	Organisational Behaviour
6.	Sanskrit	Professor [Renotification]	1	Permanent	ETB	
7.	Library Science	Lecturer	2	Permanent	1st ETB 2nd OPEN	
8.	English	Lecturer [Renotification]	1	Permanent	SC/ST	
9.	Russian	Lecturer [Renotification]	1	Permanent	ETB	
10.	Mathematics	Lecturer [Renotification]	1	Temporary	ETB	

Scale of Pay

1.	Professor	Rs. 2450-3600
2.	Reader/Asst. Director	Rs. 1950-2950
3.	Lecturer	Rs. 1300-2725

In respect of the renotified vacancie at serial nos. 2(a), 2(b), 6, 8, 9 and 1 above, if no suitable candidates ar available from the community fo which the post is reserved, candidate from the other reserved communitie will be considered for these vacancies a per rules of communal rotation. If n suitable candidate even from the othe reserved communities are available fo these vacancies, they will be treated a 'OPEN'.

In respect of all renotifications o vacancies shown above, those candidate who had responded to earlier notification should submit fresh application i response to the present notification.

The prescribed application forms an other details can be had from the under signed on request, remitting the cost o Rs. 12/- in respect of each post. In th case of candidates applying from outsid the state of Kerala remittances is to b made by Postal Order in favour of th Finance Officer, University of Calicu payable at the Calicut University Pos Office. Those applying from within th State of Kerala should remit the cost o the forms at a Government Treasury t the credit of the Head of Accoun "8443-00-106-CUF" of the Calicut University in the case of remittance in Treasury in Malappuram District and t the credit of "8658-102-04-(i) B CUS" i the case of remittance in any othe treasury in the State. The challan receip Indian Postal Order should be accompanied by a self-addressed cover affixe with postal stamps worth Rs. 3.4 Candidates belonging to SC/ST unemployed, physically handicapped perso and ex-servicemen eligible for pensio are exempted from remitting the cost application forms. Candidates fro abroad may apply on plain paper accompanied by copies of certificates remittin application fee of Rs. 100/- and the will be given additional time of 15 da for submitting their application.

Age limits, qualification, etc. will as prescribed in the detailed notificati which will be supplied along with t prescribed application forms. The la date for receipt of application in t University Office is **21.12.1987 A.N.**

Dr. S. Balaram
REGISTRAR

WADIA INSTITUTE OF HIMALAYAN GEOLOGY

Autonomous Organization of Department of Science and Technology,
Govt. of India)
33, General Mahadev Singh Road,
DEHRA DUN-248001

Advt. No. 2/87

Applications are invited by the irector, Wadia Institute of Himalayan eology, 33, General Mahadev Singh oad, Dehra Dun-248001 for the followg posts :

1. **Scientist 'E' :** 1-Post (Temporary ut likely to continue)

Pay Scale : 4500-150-5700

Job Requirements : This is one of the enior level positions in the Institute and he incumbent is expected to have roven quality of conducting and guiding igh quality research. He will be esponsible to give leadership in his field f specialization and coordinate activities f different research programmes.

Qualifications and Experience

Essential :

(i) Doctorate in Geology with atleast ten years of postdoctoral experience in geological research in Himalayan terrain.

OR

Master's Degree in Geology with atleast fifteen years of experience in geological research in Himalayan terrain.

(ii) Research publications in reputed journals.

Desirable : Organisational experience of minimum five years.

Age Limit : Maximum 50 years

2. **Registrar :** (One Post-Temporary but likely to continue)

(Pay Scale : Rs. 3000-100-3500-125-4500)

Qualifications and Experience

(1) A Degree in Arts/Science/Commerce from a recognized university.

(2) Atleast six years administrative experience in a responsible supervisory capacity with adequate experience of establishment, accounts and stores in a Scientific department or Institution of Government or an Autonomous Body.

(3) Should be conversant with Govt. rules and regulations, accounting procedure and modern management techniques.

Age Limit : Minimum 35, Maximum 50 years.

Job Requirement : This is a Senior position in the Institute. The incumbent shall be overall incharge of the Establishment, Administration, Accounts, Stores, Security and Vigilance. He shall act as the non-member Secretary to the Governing Body, the Finance Committee and/or such other committees as may be provided by the Regulations, Byelaws, Service/Recruitment Rules, etc. He shall prepare in consultation with the Director, the agenda for the meetings of different bodies and draft the minutes of the meetings. He shall perform such other duties and responsibilities as may be assigned to him by the Director of the Institute from time to time.

Note : Those who have already applied against previous advertisement No. 4/86-WIHG need not apply again. But additional information, if any may be sent.

3. **Scientist 'B' :** 5-Posts (Two posts reserved—1 for SC, 1 for ST)

Pay Scale : 2200-75-2800-EB-100-4000

Qualification & Experience

1. M.Sc. first class in Geology/Applied Geology / Geomorphology/Applied Geophysics with three years research experience

OR

Ph.D. in Geology/Applied Geology/Applied Geophysics.

Age : 35 years

Field of Specialization

Metamorphic Petrology, Geochemistry, Sedimentology, Experimental Petrology, Structural Geology. Geomorphology, Hydrology, Palaeontology.

Note : (1) For Geomorphology specialization, candidates possessing M.Sc. degree in Geography can also apply. Similarly for Hydrology specialization, candidates possessing M.E. or M. Tech. degree in Hydrology can apply.

(2) No. of Posts are likely to increase.

4. **Librarian :** 1-Post.

Pay Scale : Rs. 2000-60-2300-EB-75-2300-100-3500

Qualifications & Experience

M.Sc. with B. Lib. Science or B.Sc. with M.Lib. with minimum two years experience in a research organisation or in a University Library.

Age : Maximum 32 years

5. **Senior Assistant (Hindi Translator) :** 1-Post

Pay Scale : Rs. 1400-40-1800-EB-50-2300

Qualifications

(i) B.Sc. with Geology as one of the Subjects.

(ii) M.A. in Hindi or English.

(iii) **Experience:** Adequate experience of translating scientific Literature from English to Hindi & vice versa.

Job Requirement

(i) Translation of Annual Report, Scientific Reports, Office Order, Memorandum, Circulars and such other routine matters of the Institute from English to Hindi and vice-versa.

(ii) Any other work assigned by the superior authorities.

Age : Maximum 30 years

6. **Technical Assistant :** 5-Posts.

(1-post reserved for SC candidate)
(No. of posts likely to increase)

Pay Scale : Rs. 1400-40-1800-EB-50-2300.

Post No. 1: For X-Ray Diffractometer.
Post No. 2 : For Scanning Electron Microscope
Post No. 3: For Fission Track Dating
Post No. 4: For X-Ray Fluorescence.
Post No. 5: For Museum and Repository.

Essential Qualification

(a) For Post No. 1,2,3, and 4 : B.Sc. with Physics and Chemistry.

OR

Diploma in Electronic Engineering/ Instrumentation.

(b) For post No. 5 : B.Sc. with Geology as one of the subjects.

Desirable

(a) Two years experience of working on sophisticated analytical equipments e.g. in X-Ray diffractometer, SEM, XRF, Fission Track Dating Lab and Museum.

(b) B.Sc. with Diploma in Engineering/Instrumentation.

(c) Good Academic record.

Age : 28 years

Junior Engineer : 1-Post

Pay Scale : Rs. 1400-40-1800-EB-50-2300

Qualification and Experience

Diploma in Civil Engineering of three years duration or equivalent with adequate experience in execution of civil works and maintenance of buildings, roads & Sewers. Preparation of estimates drawings, recording of M.Bs. and other connected records.

Age : Maximum 28 years (relaxable in case of exceptionally qualified candidates).

Desirable : Two years experience.

General Conditions

1. All posts carry allowances as per Central Govt. rates.

2. Age relaxable to SC candidates as per rules.

3. Application may be made on plain paper giving the following particulars with copies of certificates :

1. Post Applied
2. Name of the Applicant
3. Father's Name
4. Date of Birth
5. Address for Communication
6. Qualifications from High School onwards mentioning examinations passed, class/grade obtained, University and year.
7. Present status and Basic Pay
8. Experience of previous employment giving names of the employer and post held
9. Nature of duties performed
10. Name & address of two referees
11. Particulars of postal order(s)
12. Any other information that the applicant may like to give.

4. A crossed non refundable current Indian Postal Order for Rs. 8/- (Rs. 2/- in case of SC/ST candidates) drawn in favour of Director, WIHG payable at Dehra Dun, should be sent along with the application. Completed application should reach the Director on or before **15.12.1987.** Candidates already in service must apply through proper channel. Incomplete applications, not accompanied by the postal orders and copies of certificate are to be rejected.

5. All applications received will be considered by a screening committee for short listing and the screening committee may restrict the number of candidates for interview on the basis of qualifications and experience higher than the minimum prescribed. The Director also reserves the right of rejecting any or all applications without assigning any reason thereof. The Institute reserves time right not to fill the posts advertised if deemed necessary.

6. Canvassing in any form and/or bringing any influence will be treated as a disqualification.

7. No interim enquiries will be entertained.

REGISTRAR

DELHI INSTITUTE OF TECHNOLOGY

Old I.G. Block, Kashmere Gate
Delhi-110006

CORRIGENDUM

Refer the 'situation vacant' notice issued by this Institute published on the 9.11.87.

The Age Limit : as on 7.12.87.

Maximum emoluments against the post of Professor : read Rs. 5870 instead of Rs. 6870.

Scale of Pay for Store Officer (S. No. 10) : read **Rs. 2000—3200** (Revised) instead of 2000-3000.

Last date for submission of applications : read 7.12.87, instead of 27.11.87

Just Published . . .

BEHIND THE POISON CLOUD—UNION CARBIDE'S BHOPAL MASSACRE

Larry Everes

This is an extremely well informed and well documented book, co-published with Banner Press, Chicago, about how and why the tragedy i Bhopal took place on the night of 2 December 1984. The author carefull places together evidence to show how the Union Carbide plant producin methyl isocyanate (MIC) in Bhopal was a 'design for disaster'.

The book has much to say about Union Carbide's arrangements fo safety in the Bhopal plant, and about the role of Union Carbide, th Indian Government and some of the medical fraternity in the month following the tragedy.

Hardbound Rs. 125.0

Orient Longman Ltd.

Regd. Office : 5-9-41/1, Basheer Bagh, Hyderabad-500 029

BOMBAY CALCUTTA NEW DELHI MADRAS HYDERABAD
BANGALORE PATNA LUCKNOW GUWAHATI

HARYANA AGRICULTURAL UNIVERSITY
HISAR
ADMISSION NOTICE

Applications are invited for admission to the following programmes from 2nd semester of the academic ession 1987-88 commencing from 1.2.1988. The last date fixed for receipt of applications in the Registrar's ffice (through proper channel in case of inservice candidates) is **31.12.1987**. No days of grace will be allowed. he eligible candidates should present themselves for interview on the date and time mentioned below gainst each programme in the Committee Room of Dean, PGS, HAU, Hisar. No separate intimation regard- ng interview will be issued :

1. Ph.D.
2. M.V.Sc.
3. M.V.Sc. (Animal Sciences) vacant seats only.

Ph.D.

Discipline 1	Date of Interview 2	Time 3	Minimum qualifications 4
College of Agriculture Entomology, Extension Education, Horticulture, Nematology, Plant Pathology, Plant Breeding, Soil Science, Vegetable Crops, Ag. Economics and Agronomy.	11.1.1988	9.30 A.M.	The minimum qualifications for admission of fresh as well as inservice candidates shall be 60% marks or a grade point average of 3.2 (4.00 basis) at the Master's level in the subject concerned (Specific detail of subjects of Basic Science disciplines is as given below) and 56% marks or grade point average of 2.50 (4.00 basis) at the Bachelor's level.
College of Basic Sciences Bio-Chemistry, Botany, Plant Physiology, Genetics Microbiology, Rural Sociology, Zoology and Statistics.	12.1.1988	9.30 A.M.	Botany: M.Sc. (Botany/Life Sciences/ Bio-Sciences).
College of Vety. Sciences Vety. Anatomy, Gynaecology and Obst., Medicine, Micro-biology, Parasitology, Pathology, Pharmacology, Physiology, Public Health and Surgery.	13.1.1988	9.30 A.M.	Plant Phy. : M.Sc. (Pl. Physiology/ Botany/Bio-Sciences/Life Sciences).
College of Animal Sciences Animal Breeding, Animal Nutrition, Animal Production, Physiology and Livestock Production and Management.	14.1.1988	2.30 P.M.	Zoology : M.Sc. (Zoology/Life Scs. Bio Scs.) Rural Sociology : M.Sc. (Sociology/ Soc. Scs.).
College of Home Science Foods and Nutrition and Home Science Extension Education.	14.1.1988	9.30 A.M.	Biochem : M.Sc. (Bio-Chem./Molecular Biology/Bio-Technology/ Chemistry/Microbiology) Stat : M.Sc. (Statistics/Mathematical Stat./ Applied Statistics) Gen : M.Sc. (Genetics/Plant Breeding/ Botany/Bio-Sci./Life Sci./Molecular Biology/Microbiology/ Biotechnology).

UNIVERSITY NEWS, MONDAY, NOVEMBER 30, 1987 Regd. No. R.N. 7180/63 Post Regd. D(C) 108

1	2	3	4
			Microbiology : M.Sc. (Microbiology/Biochem./Biosciences/Life Sciences/Molecular Biology/Genetics.

First preference will be given to the discipline of the Department.

2. **M.V.Sc.**			
College of Vety. Sciences			
1. Vety. Anatomy	15.1.1988	9.30 A.M.	B.V.Sc. and A.H. or B.V.Sc. with equivalent prog. of work and equivalent duration of period of training, with a grade point average of 2.50 (4.00 basis) or 56% marks (Where OGPA is not given) and above.
2. Vety. Gynaecology and Obst.			
3. Vety. Medicine			
4. Vety. Microbiology			
5. Vety. Immunology			
6. Vety. Parasitology			
7. Vety. Pathology			
8. Vety. Pharmacology			
9. Vety. Physiology			
10. Vety. Public Health			
11. Vety. Surgery.			
3. **M.V.Sc. (Animal Sciences)** **College of Animal Sciences**			
1. Animal Breeding			
2. Animal Nutrition			
3. Animal Production Physiology	15.1.1988	2.30 P.M.	-do-
4. Animal Feed Technology			
5. Animal Products Technology			
6. Live Stock Production and Management.			

How to Apply

Prospectus alongwith the admission form is obtainable from the Asstt. Registrar (Academic), HAU, Hisar-125004 on payment of Rs. 10/-in cash at the Counter or by sending an Indian Crossed Postal Order worth Rs. 15/- payable to the Asstt. Registrar (G), HAU, Hisar at the HAU Post Office, Hisar. Complete application form should be sent to the Asstt. Registrar (Acad.), HAU, Hisar. Incomplete admission forms will not be considered.

Fellowships and Stipends

Available on the basis of merit and on fulfilment of prescribed conditions as laid down by the University and approved by the Academic Council.

Notes

(i) All candidates are expected to bring original certificates etc. on the date of interview, failing which they may be refused admission.

(ii) The inservice candidates shall be employees of the HAU, Agriculture, Animal Husbandry Deptt. of the State Government and ICAR institutes located in Haryana, having experience of atleast 3 years of teaching, research/extension education in their organisation/Universities.

(iii) Pure M.Sc. or B.Sc. candidates are not admitted to the College of Agriculture.

(iv) Ist list of selected candidates in all the disciplines will be displayed by 25.1.88 to enable the candidates to get themselves registered by 27.1.88. Second list, if necessary, will be displayed on 29.1.88 to allow registration by 30.1.88 and 3rd list, if necessary, will be displayed on 1.2.88 to allow registration by 2.2.88. No separate intimation for the selection will be sent.

REGISTRAR

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055, Tel. 529157

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University News

MONDAY, DECEMBER 7, 1987 Rs. 1.50

Colourful Academic Procession of the Sixth Convocation of
Sri Sathya Sai Institute of Higher Learning (Deemed University) held on Novemb [illegible]

CLASSIFIED ADVERTISEMENTS

KENDRIYA HINDI SHIKSHAN MANDAL, AGRA

Adv. No. 6/87-88

Applications are invited from Indian citizens for the various Centres of the Sansthan (Post No. 1-10 are basically meant for the Gauhati, Shillong, Mysore and Hyderabad Centres only) for the following Posts :

Sl. No.	Post	Subject	Total Posts	Un-Reserved	S.C.	S.T.
1.	Professor	Applied (Hindi) Linguistics	01	—	01	—
2.	Professor (Leave Vacancy)	,, ,, ,,	01	01	—	—
3.	Reader	,, ,, ,,	04	03	01	—
4.	Reader (Leave Vacancy)	,, ,, ,,	01	01	—	—
5.	Reader	Education	01	01	—	—
6.	Lecturer	Applied (Hindi) Linguistics	02	01	—	01
7.	Lecturer (Leave Vacancy)	,, ,, ,,	04	04	—	—
8.	Lecturer	Hindi Literature	01	01	—	—
9.	Lecturer	Education	02	01	01	—
10.	Lecturer	Language Technology	01	01	—	—
11.	Research Asstt.	Applied (Hindi) Linguistics	03	02	—	01
12.	Research Asstt. (Leave Vacancy)	,, ,, ,,	01	01	--	—
		Toral :	22	17	03	02

PAY AND ALLOWANCES

Professor : Rs. 1500-2500, Reader : Rs. 1200-1900, Lecturer : Rs. 700-1600, Research Assistant: Rs. 1640-2900 plus all allowances admissible to Central Govt. employees. **Pay scale of the Professor, Reader and Lecturer is likely to be revised as per recommendation of the U.G.C.**

Age Restriction (on 31.12.1987)

Professor : Not below 35 years. **Reader :** Not below 30 years. **Research Assistant :** Not more than 35 years. Relaxable as per rules.

Reserved Posts

Candidates of S.T. can also apply for post of Professor and Reader reserved for S.C.

Qualifications Essential (A)

Posts (1 to 4, 6 & 7) : Consistently good academic record with Ist or high 2nd class (B+) Master's degree in Linguistics with Hindi at least upto Bachelor's level and/or Master's degree in Hindi with a degree or diploma in Linguistics/Applied Linguistics. **Posts (5 and 9) :** Consistenily good academic record with 1st or high 2nd class (B+) Master's degree in Education with Hindi at least upto Bachelor's level. Post (8) : Consistently good academic record with Ist or high 2nd class (B+) Master's degree in Hindi Literature. **Post (10) :** Master's degree in Hindi or Linguistics/English with Hindi at B.A. level. **(Post 11 & 12) :** Consistently good academic record with 1st or high 2nd class (B+) Master's degree in Hindi/Linguistics.

Essential (B)

Posts (1 to 9) : A Doctor's degree in the concerned discipline and/or published work of an equally high standard. **Post (10) :** Three years experience of preparing Audio/Radio/Video Programmes. **Post (11 & 12) :** Training in Linguistics/Applied Linguistice for those who hold Master's degree in Hindi and Hindi upto Bachelor's level for those having Master's degree in Linguistics.

Essential (C)

Posts (1 and 2): At least ten years experience of teaching and/or research at a University or an advanced Institute in the field of language teaching/language analysis (Western or Indian) including at least three years experience of Readership or an equivalent post. **Posts (3 to 5):** At least seven years experience of teaching and/or research at a University or an advanced Institute in the field of language teaching/Applied Linguistics including at least five years experience of Lecturership or an equivalent post. **Posts (6 to 9) :** At least one year's teaching and/or research experience at a University / Degree College / advanced Institute.

Qualifications Desirable (A)

Posts (1 to 9) : Knowledge of modern Indian Language (s) other than mother tongue and Hindi.

Desirable (B)

Posts (1 and 2) : Experience of producing materials, organising research and training programmes for teaching of Hindi. **Posts (3 to 7) :** Experience of research and field studies in language teaching/language analysis/Socio-linguistics/Hindi linguistics. **Posts (8 & 9) :** Training in Linguistics / Applied Linguistics.

Desirable (A) & (B) Post (10) : Ability to handle all Audio equipments including studio equipment and knowledge of background music.

Desirable (A) Posts (11 & 12) : Experience in Teaching of Hindi as second or foreign language/in Hindi Teachers Training/in production of Instructional materials in Hindi.

For application forms and other particulars write to Director, Kendriya Hindi Sansthan, Hindi Sansthan Marg, Agra-282005 with Rs. 1.50 paise **Stamped** self addressed envelope (23 x 10 c.m.) giving **Serial No. and Name of the Post** or obtain from counter during working days (10 A.M to 5 P. M.). Separate application should be sent for each post. Selected Candidates can be posted at Gauhati, Shillong, Mysore, Hyderabad, Delhi and Agra or at any other Campus/Centre established in future. **Closing date for Receipt of Application in Agra Office : 31-12-1987.** For applicants from abroad the closing date is **15.1.1988.**

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UNIVERSITY
NEWS

VOL. XXV DECEMBER 7
No. 49 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor :
SUTINDER SINGH

Need for an Academic Community

S. Rastogi*

Any university established in India or abroad has its functions mainly in three directions :—

(i) The generation of new knowledge through researches.

(ii) Spreading the facts and figures established in the form of curriculum among the students enrolled.

(iii) Production or preparation of new generation as research scholars for shouldering and carrying out the responsibility for generating new knowledge in future.

This cycle goes on everywhere in all the universities. The knowledge produced, about which the academicians talk in their classroom lectures, seminars or conferences etc., is region and culture free and the regional or international boundaries are unable to keep it within the region or within the nation. The academicians by nature, not all, but majority of them in India are enriched with regional feelings.

One foreign scholar, Professor Edward A. Phils has expressed his views about the Indian intellectuals as confused personalities between tradition and modernity. His wordings in an article contributed to 'Education and political development' (ed. by James S. Coleman) are as given below—

"India hardly has an intellectual community. Regional parochialism operates in intellectual as it does in political matters. People in the academic world of India are astonishingly cut off from one another".

The basic reason for this situation is the shortage of intellectual traffic among the scholars. The occasions and opportunities which bring them together are few and also there are very few who want to develop their community above regional levels.

In his comments on the problems of University education in India, Prof. Max Beloff has deplored the absence of what may be called an academic community. It is composed of a single unit of scholars at different levels, from professors to undergraduates. Even within the campus he has assessed the absence of any academic community. It has been observed in many universities that apart from the lack of physical facilities to the scholars, studies are so organized as to discourage contact between senior members and the junior members in the same department. Teaching at degree level and at P.G. level are segregated. There is little coordination between one department and another for interdisciplinary approach in the field of research and teaching in most of the universities. Prof. V. V. John has very critically observed the fragmentation of the academic community, which one may observe in the individual university college and it is more evident at the national level. It is, because of lack

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**Department of Education, South Gujarat University, Surat.*

of a strong community, the decisions to be taken by the academicians are taken by the politicians whose intellectual and academic competence is considerably less than their political importance. The selection of regional language as medium of instruction at university level may result in getting cut off the whole region from the rest of the country. Now, politicians decide regional languages as medium but they are not aware of its side effect and even if they know, they have to aviod it for their political motives. Under such circumstances, the academicians should come forward to resist such decisions. Academicians produced through regional languages will not have the competence to interact with the scholars of other regions.

It would be better for all academicians to think of fostering the growth of an academic community. In the beginning a college or a university may take the teachers and students standing together for certain recognizable intellectual values and common goals. The facilities of the institute may be limited, but, whatever facilities exist should be fully utilized so as to promote a communion of spirit among scholars in a truly intellectual climate, This is not less than a revolution i.e. revolution of mind, style of thinking and the process of proceeding towards a comman aim. The university will have to get over the limitation set by the fixed curriculum and age long old procedures of the classroom. The promotion of interdisciplinary pursuits, and even assumption of leadership in the community at large in all matters that call for intellectual guidance should be the aim of the community. This is not an indication of having identity of opinion in the university community. Also, expectation from such a community is not to get consensus, but a habit of making a scholarly approach to issues and of getting rid off from public debate of bad taste. The scholars may disagree, but, the quality of disagreement must set the tone for the discussion of public affairs.

There exist in every organization some reputed personalities, and, people for any dispute of disagreement approach them for their valuable advice. Similarly, the colleges or universities have or should have a few 'celebrities of the intellect'—dedicated and unbiased personalities—and they should share the responsibility of leadership for promoting the intellectual community towards a specified goal. The symbol, which these exceptional personalities carry with them, is the single minded pursuit of learning in its most austere form. Every one may not be of such dedication and a large number of the intellectuals may show their interest in the existing syllabi only and not in further creation of new knowledge. Similarly, many among the research scholars show their interest with their ever narrowing fields of concentration, while others are of general interest whose knowledge and experience is equally valuable for the advancement of learning. When these different rypes of scholars go beyond mere coexistence into a condition of mutual stimulation, and, are also concerned about the continuance of their work after them by the younger generation, it may be supposed that the true academic community has taken roots. But, this is not the end, this is beginning of the unification process. The efforts should be to create the circumstances for such intellectual community for the whole country.

Again, there is one hurdle in the way of such work—our habit of depending on foreign sources for academic sustenance and it creates a feeling among all of us that Indian intellectuals hardly have something to offer to one another. But, organizing seminars at different levels from university to national level, by giving full opportunity to all those who may and are eager enough to contribute something, is a milestone in the field of formation of such a community. For, it is a matter of accord on anything that needs the intellectuals' attention. The only accord needed is that of intelligent and informed debate.

The magazines containing articles written by scholars give an impression of having been painfully put together, and the uneven quality finally drives the brilliant contributors to seek publication abroad. Professor Edward A. Shils in his study of the Indian Intellectuals refers to the energetic efforts of the Indian government to create the institutional framework of modern intellectual life which runs rather ahead of the development of the intellectual class itself. This is true only of projects that those in authority have thought of first, and, if the initiative comes from the scholars themselves, the support from authority is neither prompt nor generous.

Most of the foreign books under the copyright protocal are reprinted in the developing countries, and are sold at low price. It has provided a chance for continued dependence on knowledge that has had its origin elsewhere and on its foreign expositions. In fact, the knowledge has no boundaries and once it is brought to the notice of scholars they are benefitted. But, the absence of any expectation that the Indian scholar would make a substantial contribution to the world's common stock of learning is a matter of great concern. The Indian scholar should flourish in the

(Continued on page 7)

Indian Tradition in Education

Hon'ble Dr. Shanker Dayal Sharma, Vice-President of India, delivered the Convocation Address at the Sixth annual convocation at Sri Sathya Sai Institute of Higher Learning, Prasanthinilayam on 22nd November, 1987. In an expansive address on the meaning and significance of the Indian tradition in education, Dr. Sharma observed, "Indian system of education teaches the student not to be unlimited in his wants but to be limitless only in thirst for knowledge. Such a system is based on an innate discipline which comes by cultivation of mind, not by an external imposition." Excerpts :

Convocation

Our Indian tradition is not an ostrich-like attitude, refusing to see and absorb the light of learning—around us—from different parts of the world. The whole world is a family, "VASUDHAIVA KUTUMBAKAM" is our ideal. In the words of Adi Sankara, "Swadesho-Bhuvanatrayam"—All the Three Worlds are our Motherland". At the same time, the acid-test of rational discrimination of what is right and what is wrong, should be applied; or in other words, the students ought to learn it from the master, how to apply it. In the words of Kalidasa, Quote : "Puranamithyeva—Na Saadhu Sarvam... et cetera".

"Decide it not to be good, just because it is ours and ancient; Reject it not as bad, because it is foreign and modern".

In short, Kalidasa says, "All that is old, is not gold and all that mod, is not bad." He concludes that for a healthy and happy system of education, a blending of both the old and the new is a must.

All of us are aware of the annual event of summer solstice occurring sometime in the first week of June. This is known as the longest day all over Europe. The long southward march of the Sun, from the tropic of the Cancer commences hereafter. This is known as Dakshinayana Punya Kala in Indian tradition. Raksha Bandan or Upakarma is celebrated all over India. Invariably, the South West monsoon also coincides with the commencement of the summer solstice. Continual and heavy downpour made outdoor (and war-time) operations impossible in ancient India for these four months every year. During this period, the students used to have a four-month retreat—popularly known as Chaturmasya Sankalpa. This is the Indian tradition followed for centuries by different systems of education all over the world. The Buddhists and Jains adopted the four-month retreat. Ajanta, Ellora, Shravanabalagola etc., became popular places of retreat and study. The most popularly observed custom of the Catholic retreat, is also a similar system of secluded religious studies. Now-a-days, only the ritual remains intact in the Indian tradition; the system of studies have disappeared. Whatever be the medium of instruction, the great Indian traditon of discipline and devotion in education, ought to be gradually re-introduced into the curriculum, particularly at Institutions founded by Devasthanams.

Another unique feature of the Indian tradition is the unstined and undiluted respect and devotion towards the teacher or Guru. Guru literally means, "one who deserves and commands, Gaurava or Honour." Yet another intrepretation is—'GU' stands for 'darkness' and 'RU' stands for 'removal of darkness'. 'GURU' is one who dispels the darkness of ignorance. A teacher is one who has qualities of cleanliness of the body and mind, speaking truth, knowing no evil, self-controlling his senses, kind, compassionate and noble. As Adi Sankara observes in Viveka Chudamani, Quote : "It is by the Blessings of the Almighty we have three great opportunities;—to be born as a human to seek Satya Tatwa—realisation of the Real, and more than either, to have an ideal GURU". The aim and objective of the Indian tradition is to underline the great need for an ideal teacher. The faith of the student in the teacher is as affectionate and unshakeable as that of the child in the Mother.

The life and career of the student are shaped and moulded in his "alma mater". Hence the school itself is called "the Mother." The attributes of training and instruction last from the cradle to the grave. Ancient Indian tradition believes that the teacher could change even the destiny of the student. When Sri Krishna himself was a student of the Sandipani Ashram, there is a story of how what the Lord wrote, could not be expunged even by the waters of the Seven Seas, but Lo ! could be easily erased by the mere touch of his GURU Sandipani. This anecdote emphasises the traditional reverence for the teacher.

Until a few centuries ago, the entire system of Indian education was based on the 14 Works of Pramana. They comprise the 4 Vedas, 6 Vedangas, the Meemamsa, the Puranas, the Nyaya Sastras and Dharma Sastras. In addition to these Fourteen, four more worldly Vidyas namely, Ayurveda, Arthasastra, Dhanur Veda and Gandharva Veda were also considered as Vidya Sthanas. All told, these Ashtadasa Vidyas namely, these 18 systems, were considered very important for any man, to be considered educated in those days. It is not as if only in the hermitage-retreats of bearded Maharshees with matted rocks, these systems were imparted to desiring disciples amidst their forest dwellings! These systems were the regular academic routine of many famous universities. The Chinese travellers Fahien and Hiuen Tsang, after visiting the Universities of Nalanda, Takshasila and Kanchipuram, particularly, recorded that the syllabus of even the Buddhist Universities in ancient India consisted of the Chaturdasa Vidya or the 14 Works of Pramanas, in addition to the Buddhistic literature. Throughout South India, at several educational centres called Ghatika Sthanas or Vidya Sthanas, the Chaturdasa Vidyas were the compulsory curriculum. Copper plates of the 9th and 11th Centuries refer to several centres like Ashta Sahasra (called "Ennayiram" in Tamil located near Villupuram in Tamilnadu) where the studies contained the same syllabus. It is strange that these are studied these days very much more outside India than in our own Universities.

Technical training and job-orientation, are the bye-products of the Industrial Revolution. In our own country, the colonial clerical culture has so much enlarged white-collar employment, that ours is one of the very few countries, where the blue-collar employment and the white-collar services are more or less equally balanced in strength. We have in India about 10 million industrial workers equally matched in strength by an equal number of clerical cadres comprising government, semi-government employees, both Central and the State, as well as in the public sectors. But the objective of the Indian system of education was not merely "Udara Nimiththa" but to promote the development of the total personality of the individual.

The meaning and significance of Indian system of education are seldom appreciated by modern educationalists particularly within India. Our educational system has for a long time, depended only on the English language as medium of instruction. Political and economic aspects of colonialism are no doubt, most powerful. But the most silent, yet the most serious of all the foreign influences is the linguistic colonialism. Any predominance of an alien language binds for ever the minds of men for generations. The semi-colonical character of the system of our education, is mostly responsible for blinding the eyes of our people to the values of Indian system of education.

The most outstanding quality of the ancient Indian educational system is humility, almost to the point of anonymity. Almost all our works of literature and fine arts have no known authors. The painters of Ajanta, the sculptors of Mahabalipuram and the Composers of Smritis and Srutis, have always remained anonymous. Years of research could ultimately discover only pseudonymous authors. Even when we have names like Vatsyayana, modern scholars believe that they are only Gotra names and not their personal names. Effacing the ego, was an all-time objective of the Indian educative system. I have given only a very few examples from the vast dictionary of Works of Ancient India, whose Creators have remained to this date unnamed. The humility of the Indian educator is such that they have never labelled anything as the ultimate or the final answer to any question on any subject. "NETHI" is always the last line or the last word on any subject which means "This is not the last word."

The whole world knows the Indian origins of the very fundamentals of modern sciences. The so-called Arabic numerals are called Hindsa in Arabic itself, meaning "From India". The concept of the Zero and the decimal system are traced to the Indian thought. Ancient India produced most valuable treatises on Astronomy, Mathematics, Cosmology, Geography, Physiology and Medicine, Logic and Philology, Sculpture and Architecture, Music and Dance, on Grammer, Prosody and Linguistics, as well as Science of War including training of Elephants and Horses.

There is an increasing tendency on our part to boast of this past. Such ignorant pride does not lead us anywhere, that is why, we should remind ourselves of the Vedic Maxim, "Aano Bhadraha Kratavo Yantu Vishwataha" let noble thoughts come from all sides". We should freely and frankly accept the ideas and thoughts of all countries and of all languages. Mahatma Gandhi told us to keep the windows of our home open to the winds of all countries but we should be careful that we are not swept off our feet. He thus emphasised the basic Indianness of our education.

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An equally outstanding feature of the ancient Indian educational system is Adhyaatma Vichara. Because of this very basic character of an eternal spiritual quest, the Indian system of education is sometimes mistaken to be "Other-worldly". Whatever be the walk of life or the field of specialisation, be it the science of medicine, or the mechanics of war or the art of music or dance, the performer and the performance are always dedicated to the Divine. "Daivarpana Mastu" is the attitude of every author, of every educator, of every house-holder and of every student. There is no science without sublimity, and no education without enlightenment. A totally materialistic world is like the paper-flower. It may last longer but exists without natural fragrance and an inner potentiality to multiply its message. Unfortunately, our modern educational system is like this paper-flower. That is the reason why an increased emphasis is laid these days on non-formal education. A large number of books have emerged even from the West like the "Peasant Pedagogy" of Paulo Fraire. Another title is "De-schooling Society". Even in the West, very sensitive and highly intellectual people have got fed up with formal education. The Paper-Degrees and Diplomas have formalised the system so much that our whole society is swelling up with the educated unemployed. A peculiar situation arises therefrom; all the uneducated somehow seem to be employed all the time, and all the educated seem to be unemployed all the time. That is the reason why, an increasing tendency is noticed on the part of employers to prefer performance to mere qualifications.

Apart from the other two qualities of humility and faith, the third outstanding quality of Indian system of education is skill-development. Every individual is trained in particular skills useful to him and to the society. Only a self-reliant person can be complete personality of a "whole-man". One's contribution to this world, should be more than proportionate to one's own receipts therefrom. The student is therefore, taught to be simple in his habits of food, life-style and living. We must use up as little as possible of "Chaya-Thoyam-Asanam-Vasanam" i.e. of natural resources of roofing, water, food and clothing. The bowels of the Earth have to be preserved for posterity. A very vast depletion of these resources leads to environmental pollution and ecological imbalance. Such teaching and training again has been mistaken by modern interpreters as almost a worship of poverty. Indian system of education teaches the student not to be unlimited in his wants but to be limitless only in thirst for knowledge. Such a system is based on an innate discipline which comes by cultivation of mind, not by an external imposition. Contrasting this for a moment with the happenings of any University Campus today is an unpleasant lesson, of our own making.

At the same time we have to concede the fact that certain degeneration and degradation of the Indian system did take place during periods of repeated foreign invasions. Particularly, during medieval period, the retrogression of our system was caused by undue obscurantism—almost a "planned withdrawal" by our teachers into their own domestic shell of insularity and isolation. Many systems of preventive and curative medicines, went out of our hands, because of hereditary secrecy. This decline of the Indian tradition is one of the important reasons for the dislike of the present generation to reintroduce it in the present-day system.

I am addressing these words more to the teachers of today than to the students and the youth. The elder generation has hardly realised the role and significance of a good teacher. They are mostly responsible for relegating to the background Guru-Sishya Paaramparya. The intense individual involvement and commitment between the teacher and the taught is so much missing in the class-rooms and schools of today. In ancient India an eminent educator has always been known as the Acharya. The word 'Chara' means 'to move' or 'to march'. The march of times, the procession of events and the movement of men and matters is, therefore, called Charitha or Charitra. An Acharya is one who practises what he preaches—one who makes people "move" in the right direction. He becomes an example to be emulated both in precept and in practice both in "Achaara" and "Aacharana". He is an ideal practitioner of Achara-Anusthanas as well as Shastriya-Sampradayas.

All this has cast a special responsibility on all of us. To live up to the examples and expectations of the past and present, is an arduous task. The responsibility is that of the teacher and the taught alike. There is an increasing tendency on our part, to blame the youth and the student-world for all the ills of our system. I should like to humbly submit that the elder generation is always mostly responsible for the breeding and behaviour of the young. I recall an ancient Sanskrit proverb, **Sishya-Paapam Gurum Vrajet**—the master is responsible for the sins of the students. I have myself taught at several Universities and was the Education Minister for more than

13 years in my State. May I humbly mention here that I did not have even a single strike either by the students or by the teachers during this entire period? The reason for this is not far to seek. I gave full respect to teachers and provided them with proper emoluments and facilities. I also followed in the footsteps of my great master Pandit Jawaharlal Nehru. Wherever he went, he was willing to learn from the young. Whatever be his otherwise busy schedule, he was always willing to listen to the student-groups, sparing some time for them during his visits to any city in India or abroad. In fact, he was a student all his life and, therefore, he was eternally young in his spirits.

The greatest objective of University education is to instil into its alumni the quality of humility and an ever-ready willingness to listen and learn. There is the well-known Sanskrit saying 'Vidya dadati Vinayam'. In Tamil the student is called Maanavan; meaning "one who has Maanbu" which means the quality of ennoblement which necessarily includes humility. To quote Shelley, "The more we study, the more we discover our ignorance". Most of our saints and scholars of our past, did not receive any formal education. Even within our own living memory, one of the finest products of the Calcutta University, Swami Vivekananda had to sit and learn at the feet of an illiterate master Shri Rama Krishna Paramhamsa. To quote from G.U. Pope's 'Translation of Thirukkural',

> "As on the rich
> Poor beggars wait,
> To men untaught
> The wise are great."

An old Tamil proverb says "What I have learnt is a handful of sand, what I have not, is the size of the world". Sir Isaac Newton, one of the greatest scientists of all times, proclaimed, "I am like a little school-boy collecting little pebbles on the sea-shore, while the whole ocean of knowledge is waving before me." Such great masters have declared themselves quite undereducated. To the student, it is said, in our ancient texts, the entire trinity of gods appear before him in the name and the form of his teacher. The Guru is really the Parabrahma during the period of his education. To quote,

> Gurur Brahma Gurur Vishnuh
> Gurur Devo Mahesvarah
> Gurur Sakshat Param Brahma
> Tasmai Sri Gurave Namah

It should be the spirit of relationship between the teacher and the taught. The word "Guru" means "one who leads you from darkness unto light."

Today, nearly half of the population of India are below 40-years of age. Most of them are born after the Swaraj. They have no memories of the British Raj and the Freedom Movement. The have no patience with the repeated tales of the sufferings, sorrows and sacrifices of the earlier generation. They have not passed through the World Wars and the Great Depression. They have not witnessed the gruesome real-life scenes of plague and famine. For most of them, Jallianwala Bagh, Chauri-Chaura, Champaran, Bardoli, Vaikom and Dandi, are mere place-names in the atlas. It is the fault of the elder generation and the educational system we have devised. If we do not bridge this generation-gap right now, the next generation would be further removed from their own basic national and cultural moorings.

The aim and objective of all education is to maintain, sustain and develop a healthy mind in a healthy body. Co-curricular and extra-curricular activities have as much place in our system as the curriculum and the syllabus. The lack of such activities is the reason for the growing evils of habitual smoking, drinking and drug-addiction fast growing amidst our student community. Here again, we are responsible for creating such an atmosphere of psychological apathy, isolation and alienation leading to such unhealty practices spreading like wild fire, amidst the youth today. To quote, Mahatma Gandhi, "Innocent youth is a priceless possession not to be squandered away for the sake of momentary excitement, miscalled pleasure". Every effort within our budget and every step within our capacity, should be undertaken to save the innocent youth for their own future.

The foremost feature of our educational system should be to train the youth to see the good in every human being and to take the best out of each individual potential. Education literally means "Taking out" from the Latin word "Edu-care". Education is not injection or injunction. It is not indoctrination of views and ideas or just an imposition of one's views upon others. In short, education should not be an infliction. The moment education becomes such an infliction, the consequence will be, student-indiscipline, strikes and agitations within the campus. Thiruvalluvar mentions "Functioning eyes belong to those who are educated. The rest are blind". Writing and arithmetic are considered in Tamil literature as the right eye and the left eye of all education. Initiation of the youth into education is called in Sanskrit as "Upa-Nayana", the second sight. Knowledge is called the "Third Eye" in many systems of philosophy. The real education is described in a famous Tamil work as follows :

> "That which is not destroyed by fire,
> Not sub-merged by flood.
> Not parched up by famine.
> Not swallowed by earthquake,
> Not wiped off by epidemics,
> Not shaken by explosions,
> Not stolen by thieves,
> Is preserved for ever,
> Only in our minds and memories."

We have to search our own conscience and say whether our education system fulfils the above standards. Unfortuately, the system as it has developed, has certain major weaknesses. For instance, it still continues to be dominated by models and value systems of the colonial regime; it lays emphasis on narrow individualism, verbal fluency especially in English, unhealthy competition to the neglect of social good, and mere acquisition of information, while neglecting such other social objectives as cooperation, manual work, skill-development and character-building. In short, as the University Grants Commission points out, it places an almost exclusive emphasis on "formal schooling" with its single-point entry, annual system of examinations and promotions, insistence on full-time attendance and exclusive use of full-time teachers. It neglects both non-formal and recurrent education. The educational institutions function in isolation from one another and from the community as a whole. It is also true that the upper and middle classes are the main beneficiaries of this system.

The role in the University system, as it ought to develop in future, has engaged the attention of the University Grants Commission. The system must inculcate and promote basic human values. It must preserve and foster our great cultural traditions and blend them with essential elements from other cultures and peoples. It must promote a rational outlook and scientific temper. It must enrich the Indian languages and promote their use as important means of communication on national development and unity. It must promote the development of the total personality of the students and inculcate in them a commitment to society. It must not only act as an objective critic of society, but also contribute to the improvement of the entire educational system. Most of these objectives are not being edequately fulfilled by our performance today. The cream of our talent and the best of our youth today, seek safer shores abroad, not because they have better employment or better income across the seas, not also because they have better facilities or better infrastructure in other countries, but only because they find a better atmosphere for better education there. I am not merely referring to "brain-drain" in search of better living; I am referring to hundreds of unknown Srinivasa Ramanujans living amongst us today, whose genius is neither found nor recognised by us. It takes some other foreign university to find them and recognise them. It has led to such a situation that scientists of Indian origin winning international awards are claimed as foreign nationals. ☐

Need for an Academic Community

(*Continued from page 2*)

world, like others in foreign countries, and the academic community may make the pilgrimage in search of its own identity by contributing something to the rest of the world, instead of accepting every thing from them.

Finally, it is essential to make it clear that academic community is not any trade union which will carry all the intellectuals on war path. It is a mental preparation of the intellectuals to jointly work for generation of new knowledge, fruitful for the whole world, and, giving full opportunity to the youngsters to carry over their task in future too. For this, we have to break the fence of regionalism and casteism by providing full opportunities to those who may really flourish. And, for this we have to isolate from the mainstream persons like 'Dronacharya' in 'Mahabharata' who harassed the innocent and skilled warrior 'Eklavya'. The time has come to provide the Eklavyas full freedom and facilities to develop and flourish, as finally it would bring name and fame to the country. This is possible if we have in India a real academic community of scholars mentally prepared to accept the reality. ☐

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
December 16-18, 1987	International Symposium on Electronic Devices, Circuits and Systems.	To provide a forum to research workers all over the world for exchange of information and technical perceptions in electronic devices, circuits and systems.	Indian Institute of Technology, Kharagpur.	Prof. N. B. Chakravarti, Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur-721302
December 18-19, 1987	National Conference on Role of Universities in Implementation of New Education Policy.	The Conference will focus on Management of Higher Education, Improvement in Efficiency and New Strategies in Higher Education vis-a-vis New Education Policy	Association of Indian Universities in collaboration with Osmania University, Hyderabad.	Dr. V. Natarajan, Project Director (Exams) Association of Indian Universities, 16, Kotla Marg, New Delhi-110002
December 21-25, 1987	Workshop on Science and Technology	To initiate a dialogue for the interaction of the Government, industry, institutes and to update the present technology.	Department of Astronomy & Space Sciences, Punjabi University in collaboration with the Punjab State Council of Science & Technology.	Prof. H.S. Gurm, Director, Department of Astronomy & Space Sciences, Punjabi University, Patiala-147002
December 23-26, 1987	XVI All India Conference of the Indian Association of Special Libraries and Information Centres (IASLIC)	To discuss the Challenges of the Emerging Information Society : National Policy Issues.	Sri Venkateswara University Library, Tirupati	Shri R. Sreepathi Naidu, Organising Secretary & Librarian, Sri Venkateswara University Library, Tirupati 517502
December 28-30, 1987	Third National Conference on Surfectants, Emulsions and Biocolloids.	To provide an opportunity to technologists and experts from academic and research institutions and industries to exchange views and discuss developments related to latest findings from active research.	Aligarh Muslim University in collaboration with Indian Society for Surface Science and Technology.	Dr. H.N. Singh, Reader, Department of Chemistry, Aligarh Muslim University, Aligarh.
December 28-31, 1987	33rd All India Library Conference	To discuss various aspects of modernisation in Libraries	Bharathidasan University in collaboration with Indian Library Association	Mr. A. Sundararajan, Organising Secretary, 33rd All India Library Association, Bharathidasan University Library, Tiruchirapalli 620023
January 3-8, 1988	Second International Colloquium on Concrete in Developing Countries	To discuss various aspects of the subject as related to the needs of developing countries.	Engineering Staff College of India, Hyderabad & Institute of Engineers (India).	Mr. R.N. Raikar Chairman, Civil Engg. Divn., Institution of Engineers (India) and Principal Coordinator 2nd ICC, 1008/9, Raheja Centre, Nariman Point, Bombay-400 021
February 5-6, 1988	National Seminar on Interaction between Institutions and Industries through Science and Technology Entrepreneurs' Parks	To provide a forum of young entrepreneurs, industrialists, scientists and educationists to deliberate on the vital issues of Industry-Institution interaction.	STEP, Roorkee and University of Roorkee, Roorkee	Prof. M.P. Jain, Organising Secretary, National Seminar IIISTEP, Office of the DRIL, University of Roorkee, Roorkee-247667
February 7-9, 1988	Mapcost Symposium on Indian Studies on Chrysomelidae and Bruchidae	To discuss different aspects of study of Chrysomelidae and Bruchidae insects.	Govt. Arts and Science College, Durg (M.P.)	The Secretary, Mapcost Symposium, Govt. Arts and Science College, Durg-491001 (M.P.)

Alagappa University Forges Ahead

Dr. Alagappa Chettiar, philanthropist and educationist, had founded a galaxy of educational institutions in his home town, Karaikudi. The Government of Tamil Nadu, in recognition of his meritorious services to the cause of education, established the Alagappa University at Karaikudi in May 1985 transferring all the properties of the Alagappa Trust as the nucleus of the University.

The University is getting an annual maintenance grant of Rs. 60 lakhs from the State Government. Thanks to the spontaneous support of the University Grants Commission, the Alagappa University was recognised within the shortest time-within a year of its formation. The UGC has also sanctioned Rs. 75 lakhs as Developmental Grant for the Seventh Plan period besides other unassigned grants and Fellowships.

This University's basic Philosophy is 'Excellence in Action' and it aims at developing itself into a Research University where purposeful, socially relevant and qualitative research would be fostered, taking into account the socio-economic environment in which it is established.

Academic Activities

While future plans envisage for more, abiding interest has been taken by the University to enrich the curricular content of the existing courses. The University's new and socially relevant courses of study in advanced spheres of Science include Postgraduate Studies in Computer Applications and Industrial Chemistry with specialisation in Electrochemistry which is unique in South India. To meet the fast expanding corporate sector's institutional needs, a Postgraduate Course in Corporate Secretaryship has been started from 1986-87. This course is unique in the whole of India and has a tremendous employment potential.

New concepts in the design, content and structure are being incorporated in all the other Faculties, such as Physics, Mathematics, Commerce, Tamil, Education and Physical Education and the Faculty members are involved in redesigning and reorienting the courses in Higher Education. Infrastructure of every department has been strengthened for research and all the departments are offering full time and part time research at M. Phil. and Ph.D. level. Emphasis is laid on research in the application of science and technology to the uses of the society as this alone will accelerate the process of industrial and economic development.

Future Plans

In order to be at par with other established universities in the State and in order to forge a unique identity of its own, Alagappa University is making tremendous efforts in terms of academic planning and introduction of new courses. Being a unitary university, the aim of the University is to develop into an institution devoted to higher education and research, similar to the Indian Institute of Science, Bangalore. The University proposes to start courses of inter-disciplinary nature to create infrastructural facilities to promote vertical and horizontal growth.

The University's plans and programmes are as under:

(a) Department of Industrial Chemistry is introducing :

  (i) Chemistry and Technology of Oils, Paints and Pigments;

  (ii) Chemistry and Technology of Pharmaceuticals, Fine Chemicals and Cosmetics.

(b) Department of Mathematics proposes to strengthen the teaching and research activities in applied areas of Mathematics by starting M.Sc. Applied Mathematics with subjects like Mathematical Biology, Numerical Methods and Discrete Mathematics.

(c) The Department of Physics intends to provide M.Sc. Courses in emerging fields of Atmospheric Physics and Instrumentation and Electronics.

(d) The Department of Commerce proposes to start M. Com. (Entrepreneurship) Course with an idea of selecting potential and prospective entrepreneurs and imparting to them knowledge with a special emphasis on practical training on an inter-disciplinary basis to enable them to establish and run small units successfully.

(e) The Department of Tamil proposes to offer M.A. Temple Arts and Architecture as South Indian temples have great historical and architectural value.

(f) The University has a sprawling Campus for physical and mental development. The Department of Physical Education proposes to offer (i) M. Phil. in Industrial Sports and Labour Welfare and (ii) M.Phil. in Recreation and a Course in Sports Journalism.

(g) The Department of Education has proposals to start M.A. in Adult and Non-Formal Educational Technology.

(h) **New Departments**

New Departments like Department of Management Science, Department of Research Methodology, Department of Education Technology are also contemplated.

Training University Teachers

The University Grants Commission (UGC) is reported to have selected 50 universities in the country to start a training course for the newly-appointed lecturers in univesities and colleges as envisaged in the new national policy on education. As per Mehrotra Commission recommendations the training course would also be considered as a criterion for future promotion of such new lecturers. The training colleges are expected to start functioning by the end of 1987. The UGC has also agreed to bear all the expenses involved in the project.

The national education policy stipulates that new lecturers or the young lecturers already in service should take reorientation course for two months, which may be taken at a stretch or in two parts. The refresher course would be conducted in the new lecturer's subject to update or advance the knowledge in the subject concerned. Beside brushing up their memory, the course will help the teachers get accustomed to the methodology and the environment. Current. problems will be part of the course.

News from Agril. Varsities

Community Biogas Plant

Dr. Sukhdev Singh, Vice-Chancellor, Punjab Agricultural University, recently inaugurated the Community Biogas Plant Hambran. In his address he stressed the need to harness energy from renewable sources as the country was facing acute energy crises. He appreciated the role of beneficiaries and the scientists who managed to operate the largest community biogas plant in India uninterruptedly.

The 505 cubic metre capacity plant was installed at village Hambran with a financial assistace of Rs. 15 lakh from the Department of Non-Conventional Energy Sources, Government of India. The plant will provide biogas to about 82 households.

Dr. Khem Singh Gill, Director of Extension Education, stressed the need to provide bio-gas for the rural people to provide them clean fuel which will help in improving their standard of living as well as provide better manure for the farms. It would further help to maintain cleanliness around the villages.

Dr. S. D. Khepar, Additional Director of Research (Agricultural Engineering) while welcoming the Chief Guest said that it was the only plant in India where solid liquid separation machine is operational which has been invented by the University scientists.

Dr. S. K. Vyas, Project Incharge, briefly explained the development of slurry handling pump and the only large scale installed system for recycling the effluent slurry to increase biogas production during winter by 15 to 20 per cent. He also explained about the large scale field experiments to evaluate the nutrient value of anaerobically fermented slurry by the scientists.

News from Abroad

Science Awards 1987

The 1987 Unesco Science Prize, the Javed Husain Prize for Young Scientists and the Carlos J. Finlay Prize have recently been presented by the Director-General, Unesco in Paris. These prizes are awarded every two years to coincide with the holding of the General Conference.

The Unesco Science Prize, which rewards a person or a group of persons for an outstanding contribution, through the application of science and technology, to the technological progress of a developing Member State or region, went to Professor Yuan Longping (China) and his colleagues at the Human Academy of Agricultural Sciences in Changsha for developing hybrid rice which can be used for the purposes of large-scale, high-yield commercial production.

The Javed Husain Prize for Young Scientists recognizes work of exceptional quality in pure or applied research carried out by young scientists. The prize for 1987 was shared by Dr. Jan Balzarini (Belgium) and Dr. Luis Herrera Estrella (Mexico). A biochemist at the Catholic University of Louvain, 34 year-old Dr. Balzarini has developed, through research and testing, a combination therapy of drugs for cancer treatment by chemotherapy and another set of compounds for the sequential treatment of AIDS patients. Dr. Herrera Estrella, 31, is a geneticist specializing in plant genetic engineering. Director of the molecular biology department at the Irapuato Centre for Research and Advanced Study, he and his team were the first to report the successful transfer and expression of foreign genes (of bacterial origin) in plants. The application of these findings increases the agricultural value of crop plants by improving their regulatory systems.

The third prize, named after the eminent Cuban scientist Carlos J. Finlay (1833-1915) whose discoveries led to the conquest of yellow fever, is meant to promote research and development in microbiology. The 1987 winners are Dr. Helio Gelli Pereira (Brazil) and Professor Peter Reichard (Sweden). Dr. Pereira, who is the founder-director of the Centre for Gastro-intestinal Virus Research at the Oswaldo Cruz Institute, has been a pioneer in the study of virus replication in cells, a latency mechanism in certain viruses causing cell damage, and in the study of respiratory viruses that strike both man and animals. Professor Reichard is the Director of the Department of Biochemistry of the Medical Nobel Institute and a professor at the Karolinska Institute of Stockholm. For three decades he has worked on the pathway that generates the building blocks for DNA synthesis. The fundamental discoveries he and his colleagues have made are taught in all biochemistry textbooks.

TWAS Awards 1987

The Third World Academy of Sciences (TWAS) has invited nominations for the four Awards in Basic Sciences in the field of Biology, Chemistry, Mathematics and Physics for the year 1987 from all members of the Third World Academy of Sciences as well as from Science Academies, National Research Councils, Universities and Scientific Institutions in developing countries. Nominations are also invited from members of Scientific Institutions in advanced countries.

One of the main objectives of the Third World Academy of Sciences is to give recognition to high calibre scientific research performed by individual scientists from developing countries and to foster it for the benefit of human welfare and the development of the Third World. In pursuance of the above objective, the Academy awards prizes to individual scientists from developing countries who, in the opinion of the Council of the Academy, have made outstanding contributions to the advancements of science. Consideration will be given to proven achievements judged particularly by their national and international impact.

Nominations should be made on the Third World Academy of Sciences form entitled "TWAS 1987 Awards—Nominations Form". Each nomination should clearly state the contributions which the candidate has made towards the development of the particular field of science for which the Award would be given. Each nomination should be accompanied by complete biodata and a list of publications and, if possible, examples of publications or other evidence which best represent the candidates' contributions. Names and address of at least five renowned scientists should be provided, preferably with a wide geographical distribution, who might be contacted by the Academy for assessing the candidates contributions.

Each Award will consist of a prize amounting to US $ 10,000 as well as a medal on which major contributions of the Award winner will be mentioned. The last date for receipt of Nominations in the offices of Executive Secretary is **1st June, 1988.** Nomination forms can be had from the Executive Secretary, Third World Academy of Sciences, International Centre for Theoretical Physics, 34100 Trieste (Itlay), P.O.B. 586, Miramare, Strada Costiera 11.

48th All India
Inter-University Athletic Meet
Punjabi University, Patiala
10-14 JANUARY, 1988

Fearless Feathered Feet
Flee Farther in the Firmament

Baljit S. Grewal
Organising Secretary

AVCC Admits Curtin University

The Curtin University of Technology, formerly the Western Australian Institute of Technology, is reported to have been admitted to the membership of the Australian Vice-Chancellors' Committee (AVCC). The recognition has been recommended after comprehensive evaluation undertaken in accordance with AVCC guidelines on new universities. The evaluation took into account staff qualifications; research productivity; quality of student entry; success rates of students during their courses and in gaining employment; postgraduate developments; plant and facilities including library holding and research equipment; and success in gaining external research support both, competitively and directly from industry. With this the number of universities represented on AVCC has risen to 20.

SPORTS NEWS

Varsities' Teams for National Championships

Cricket (W)

Senior National Women Cricket Championship is to be organised at Ahmedabad in January 1988. Indian Universities Women Cricket Team for participation in the National Championship will be selected at the Inter-University Women Cricket Championship concluding at Guru Nanak Dev University, Amritsar on December 8, 1987.

Tennis

Indian Universities Tennis (Men and Women) Team to participate in the National Tennis Championship being organised at Calcutta from December 28 to January 2 will be selected at Banaras Hindu University on December 18 & 19, 1987. The team will undergo training for a brief spell at Banaras Hindu University under the supervision of Mr. D. R. Adhirana, Tennis Coach prior to its participation in the National Championship.

Rowing (W)

Rowing for women has been included in the Inter-University Sports Competition programme with effect from the current session. The National Rowing Championship for women is being organised at Calcutta from December 8 to 10. Indian Universities Rowing Team for women was selected at the Inter-University Rowing Championship held at Calcutta from Dec. 4 to 6, 1987.

ASSOCIATION OF INDIAN UNIVERSITIES

AIU HOUSE, 16 KOTLA MARG, NEW DELHI-110002

Applications from Indian citizens are invited for the following posts in the prescribed form available on payment of Rs. 2/- from the office of the Association :

1. ASSISTANTS Pay Scale : Rs. 1400-2600 (Revised)

Graduate with atleast five years experience in Educational Institutions/Govt./ Autonomous Organisations. Experience in noting, drafting, maintenance of records and knowledge of typewriting will be preferred.

2. LOWER DIVISION CLERKS Pay Scale : Rs. 950-1500 (Revised)

Higher Secondary with good typing speed. Preference will be given to those having office experience and knowledge of Reception, telephone and telex machine operation.

The posts carry dearness and other allowances generally at the Central Government rates. Total emoluments at the initial of the scale amount to Rs. 2017/- for Assistant and Rs. 1464/- for LDC respectively, including HRA and Special Allowance. Higher start in the prescribed pay scales may be given in deserving cases. Relaxation in any of the requirements may be made in exceptional cases. The Association reserves the right not to fill up the vacancies advertised, if the circumstances so warrant. SC/ST/Ex-servicemen will be given preference. Canvassing in any form by or on behalf of a candidate will be a disqualification.

Applications complete in all respects should reach the Office by **21 December, 1987.** Persons already in service should apply through proper channel. Applications received after the last date or without complete information will not be entertained.

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is open from 9-00 a.m. to 5-30 p.m. Monday through Friday. Access can also be had through Inter library loan for which requisition must be made through your Librarian.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Library Science

1. Kundu, Ashish Kumar. *Integration of new technologies : A framework for decision making for automating library operations.* BHU. Dr. Y.P. Dubey.

2. Vij, Rajeev. *Information needs, awareness, habits and problems of defence scientists in India : A study.* Panjab. Dr. H.R. Chopra.

Psychology

1. Arunima. *Aggression among children : A socio-psychological appraisal.* Panjab. Dr. Jitendra Mohan and Dr. A. Mahajan.

2. Bhatia, Preet. *A study of stress in relation to personnality, death anxiety religiosity and locus of control of army executives.* Panjab. Dr. Jitendra Mohan.

3. Dakshina Moorthy. *Stress reactions in children : An analytical study.* Kerala. Dr. S. Jayakumari.

4. Janaki, K.N. *Personality variables and stress as factors associated with cancer.* Kerala Dr. Immanual Thomas.

5. Kang, Kavita. *A study of ego-strength and intrinsic motivation as differentiating factors in creativity and intelligence.* Panjab. Dr. Lakhvinder Singh Minhas.

6. Khanna, Kanchan. *Role stress and coping mode of male and female executives : A comparative study.* BHU. Dr. A.K. Srivastava.

7. Shrivastava, Purnima. *Organisational climate and mental health.* BHU. Dr. A. Prakash.

8. Singh, Amit Kumar. *Physical and psychological factors determining organisational satisfaction : An environmental study.* BHU. Dr. (Miss) R. Mitra.

9. Singh, Anjulata. *Psychological study of working woman.* BHU. Dr. A.P. Singh.

10. Surendra Singh. *Performance persistence task.* BHU. Prof. B.S. Gupta.

11. Upadhyay, Madhu Bala. *Stress, strain and coping strategy.* BHU. Dr. A.P. Singh.

Sociology

1. Kadam, B.S. *Socio-historical study of police-administration in Bombay presidency, 1865 to 1947.* Shivaji. Dr. A.D. Madgulkar.

2. Kotikela, Devadas Chennakrishnaiah. *A study of atrocities on scheduled castes in post-independent Karnataka.* Shivaji. Dr. S.M. Dahiwale.

3. Sharma, Jyoti. *Role relationship between physician and patient in a hospital setting : A study in P.G.I., Chandigarh.* Panjab. Dr. S.R. Mehta.

Political Science

1. Allexander, K. *A critical study of administration reforms in Kerala.* Kerala. Dr. P.J. Allexander.

2. Komalan, P. *Conflict of agravian interest groups in Kerala* Kerala. Dr. C.N. Somarajan.

3. Lalu, S. *Problems of public personnel management in K.P.E.C. : A study.* Kerala. Dr. C.N. Somarajan.

4. Nazarudeen, M. *Role of Muslim League in Kerala politics since 1976.* Kerala. Dr. C.N. Somarajan.

5. Sebastian, A.A. *Role of Chief Minister in coalition Governments : A study of Kerala.* Kerala. Dr. N. Jose Chander.

6. Shalom Prakash, J. *The genesis and maturity of the ethnic problems in Sri Lanka : A geo-political study.* Kerala. Dr. C.N. Gomarajan.

7. Sudha, K. *Administration of collegiate education in Kerala.* Kerala. Dr. P. Vijayaraghavan.

8. Udayabhanu, K.M. *Dheevara community and social change in Kerala.* Kerala. Dr. A. Balakrishnan Nair.

Economics

1. Naveen. *Exchange rate conversions and product comparisons in the international estimates of national income.* Panjab. Prof. M.R. Aggarwal and Prof. S.P. Singh.

2. Nayak, P.G. *A survey of selected small-scale industries in Dharwad City.* Shivaji. Dr. T.G. Naik.

3. Trivedi, Seema K. *Economics of prenatal nutrition of slum dwellers in Indore City with special reference to the minerals : Magnesium zinc, copper, calcium and iron.* Devi Ahilya. Dr. V.D. Nagar and Dr. B.C. Chhaprwal.

Public Administration

1. Sandhu, Paramjit Kaur. *Analysis of the performance of Punjab Financial Corporation.* Panjab. Dr. B.S. Ghuman.

2. Shital Parkash. *Structure and procedures of administrative services in Panjab University : Problems and prospects.* Panjab. Prof. Satya Deva.

Commerce

1. Aravindakshan, N. *Evaluation of the cooperative movement in the coir industry in Kerala.* Kerala. Dr. M. Saragadharan.

2. Baranwal, Jwala Prasad. *Institutional financing in U.P. State Government Enterprises with special reference to Sectoral Corporation.* BHU. Dr. M.B. Shukla.

3. Gopi, V.K. *Financial administration of panchayats in Kerala.* Kerala. Dr. M. Saragadharan.

4. Manilal, M.K. *Sickness of the textile industry in Kerala.* Kerala. Dr. M. Saragadharan.

5. Thampan, M.R. *Evaluation of the role of co-operative banks in the uplifting of rural poor.* Kerala. Dr. C.N. Purushothaman Nair.

6. Thomas, Jacob. *Public distribution system in Kerala : A critical study.* Kerala. Dr. M. Saragadharan.

7. Verma, Kamal Bhushan Singh. *Socio-economic condition of bonded labour in Himachal Pradesh.* HP. Dr. Suresh Kumar.

Business Management

1. Hemavathi, C.S. *Evaluation of the motivational techniques for managerial development in selected public and private enterprises.* Kerala. Dr. C.N. Purushothaman Nair.

2. Kanwar, Vijender Kumar. *Working capital management in public sector with special reference to selected Himachal Pradesh state corporations.* HP. Dr. Sunil Kumar Gupta.

3. Krishna Kumar. *Management of account receivable in UPSEB.* BHU. Dr. N. Rao.

4. Ray, Basab. *Cash Management in heavy engineering Industry of West Bengal.* BHU. Dr. N. Rao.

HUMANITIES

Philosophy

1. Cletus, Chukwu Nwawuike. *Jaspers analysis of human action : Responsibility and God.* Panjab. Dr. Indu Sarin.

2. Tsewang, Lobzang. *The Madhyamic's conception of truth and error.* BHU. Prof. L.N. Sharma.

Fine Arts

1. Lewandowski, Rafal Adam. *Symbolism in the art of the Gupta period and early Chaulukyan period.* BHU. Dr. (Km.) Rashmi Kala Agrawal.

Drawing & Painting

1. Kapoor, Poonam. *Catalogue raisonne of pahari and Rajasthani drawings and painted sketches in the Government Museum and Art Gallery, Chandigarh.* Panjab. Prof. B.N. Goswamy.

2. Patel, Lal Chand. *The place of women in Mughal art.* BHU. Dr. D.K. Dasgupta.

Music

1. Bhaduri, Rita. *Shiksha evam jeevan mein sangeet ka mahatva.* BHU. Dr. B.V. Patekar.

2. Bhadury, Brahma Gopal. *Sangeet mein darshan : Yoga-jyotish ka samayvaya.* BHU. Dr. B.V. Patekar.

3. Parvinder Rattan. *An experimental study of the symbiotic relationship between Shri Guru Nanak Bani and Hindustani classical music.* Panjab. Prof. Dab Brat Chowdhary and Prof. Darshan Singh.

4. Prem Lata. *Varanasi ke sangrahayalaya aur darshak : Ek vivechanatmak adhyayan.* BHU. Dr. S.K. Srivastava.

Language & Literature

English

1. Dhanavel P. *English language teaching.* BHU. Dr. A. Sircar.

2. Isaac, C.S. *I.A. Rechards and modern literary criticism.* BHU. Dr. S.K. Sinha and Dr. G.B. Thampi.

Sanskrit

1. Agarwal, Namita. *Rampanivad ka natya sahitya.* HS Gour. Dr. R.V. Tripathi.

2. Antherjanam, N. Ganga. *Rukmangada caritam : A study with reference to Bharat Naradiya Purana.* Kerala. Dr. E. Eswaran Nampoothiri.

3. Chandrakumari Amma, M. *Ramapanca sati : A study.* Kerala. Dr. N.P. Unni.

4. Dwivedi, Uma. *Puranvangmaya mein Narad katha.* HS Gour. Dr. Bal Shastri.

5. Gupta, Rasimi. *Sanskrit vangmai mein purush-tatva : Ek samedeshatmak adhyayan.* Panjab. Dr. Rama Kant.

6. Jain, Sadhana. *Mandaramrand Champu ke natyashastriya ansh ka vivechan.* HS Gour. Dr. Kusum Bhuriya.

7. Mitra, Munna Lal. *Sanskrit rupkon mein Nandi tatha Bharatvakya : Mapan se dasvin shati tak.* HS Gour. Dr. Bal Shastri.

8. Mitra, Ram Jee. *Brahitrayi mein pratibimbit dharamshastriya avadharnayen.* HS Gour. Dr. Bal Shastri.

9. Mitra, Shiv Kumar. *Pandit Shri Raghunath Sharma : Vyaktitva evam krititva.* HS Gour. Dr. Bal Shastri.

10. Namboothiri, N. Govindan. *Raghavananda and his works.* Kerala. Dr. E. Eswaran Nampoothiri.

11. Padmakumari, S. *Vinavasavadatta : A study.* Kerala. Dr. P. Syamala Devi.

12. Prasad, P. *Concept of self in Atmatattva viveka.* Kerala. Dr. K. Vijayan.

13. Premakumar, G.P. *Vishnuvilasa of Ramapanivada : A study.* Kerala. Dr. P. Syamala Devi.

14. Ramadas, D. *Nalabhyudya of Vamanabhatta Bana : A study.* Kerala. Dr. P. Syamala Devi.

15. Robinson, R.J. *A study of Aryabhatiya of Aryabhata.* Kerala. Dr. N. Gopala Panicker.

16. Shukla, Gyanendra Kumar. *Rigveda ka pancham Shastra saptam mandal mein ayurvediya tatva.* BHU. Dr. L.D. Dwivedi.

17. Sreedevi, S.K. *Mayurasandesa of Udaya : A critical study.* Kerala. Dr. N.P. Unni.

18. Srivastava, Jyotsna. *Rigveda ke pratham teen mandal mein ayurvediya tatwon kee avadharna.* BHU. Dr. L.D. Dwivedi.

19. Tripathi, Anil Kumar. *Sanskrit natakon mein prayogdharmita.* HS Gour. Dr. R.V. Tripathi.

20. Viswanathan Achari, P. *The concept of Visesa in Vaisesika philosophy.* Kerala. Dr. K. Vijayan.

Punjabi

1. Chitranjan Singh. *Gauri Sukhamani mahala vich Brahm Giani da sankalap.* Panjab. Prof. Attar Singh.

2. Harminder Kaur. *Bhagat Kabir te Guru Tegh Bahadur de shalokan da tulnatmak adhyayan.* Panjab. Prof. Gulwant Singh and Prof. Darshan Singh.

3. Makhan Singh. *Sant Ravi Dass ate Guru Nanak : Ek tulnatmak adhyayan (Darshnik drishti ton).* Panjab. Prof. D.P. Singhal.

4. Parbhjot Kaur. *Nature of Sikh mysticism in modern Punjabi poetry.* Panjab. Dr. J.S. Chhabra.

5. Saroj Rani. *Guru Ravi Dass te jiwan mull.* Panjab. Prof. D.P. Singhal.

Hindi

1. Dua, Prem Lata. *Nagarjun ke kavya mein samajvadi-yatharthvad.* Panjab. Dr. Paresh.

2. Hans Raj. *Rashtriyata ke sandarbh mein Sohan Lal Dwivedi ka kavya.* Panjab. Dr. Sansar Chandra.

3. Jadhav, Mohan Pundlik. *Hindi aur Marathi kavya mein varnit Chhatarpati Shivaji ke charitra chitran ka tulnatmak adhyayan.* Shivaji. Dr. V.K. More.

4. Parihar, Satyendra Kumar. *Guru Ravi Dass evam Sant Kabir Dass : Ek tulnatmak adhyayan, darshanik drishti se.* Panjab. Prof. D.B. Singhal.

5. Parmel Singh. *Vidyapati kee padavali : Saundryatatvik vivechan.* Panjab. Dr. Paresh.

6. Prema Kumari, M. *Naresh Mehta ka kavya.* Kerala. Dr. S. Thankamony Amma.

7. Raj Kumari. *Hindi kee tyagparak sangyaon ka vishleshanatmak adhyayan.* Panjab. Prof. D.P. Maini.

8. Rajinder Kaur. *Rahasyavad kee drishti se madhyayugeen Hindi kavya uur chhayavadi kavya ka tulnatmak adhyayan.* Panjab. Dr. Jaya Parakash.

9. Roshan Lal. *Manav mulyon ke sambandh mein Tulsi ke kavya ka adhyayan.* Panjab. Prof. D.P. Maini.

10. Shamshad Begum, R. *A comparative study of modern psychological short stories in Hindi and Malayalam.* Kerala. Dr. V.V. Viswam.

11. Sheela Kumari, R.S. *Novels and short stories of Kamaleshwar.* Kerala. Dr. J. Ramachandran Nair.

12. Sreeja S. *Yashpal kee kahaniyan-Pragativad ke vishesh sandarbh mein.* Kerala. Dr. V.V. Viswam.

13. Sreekumar, S. *Bhishma Sahni ka katha vangmay.* Kerala. Dr. V.P. Mohammed Kunju Metharu.

Urdu

1. Brij Bhushan. *Mahinder Nath Bahaioiyat novel nigar.* Panjab. Dr. Haroon Ayub.

Malayalam

1. Anithakumary, T. *The city in contemporary Malayalam novel.* Kerala. Dr. N. Mukundan.

2. Chithra Bhanu, C.P. *The influence of Malabar Riot in Malayalam literature : A sociological analysis.* Kerala. Dr. V.S. Ramakrishnan.

3. Kunnummel, Prabhakaran Rayareth. *Children's literature in Malayalam : Study based on child psychology.* Kerala. Dr. V.S. Ramakrishnan.

4. Muraleedharan Achari, S. *Images and symbols used by the poet Shri Vayalar Rama Verma.* Kerala. Dr. K. Sukumara Pillai.

5. Samuel, Susamma. *Cases in Malayalam : A syntactic study.* Kerala. Dr. K. Sukumara Pillai.

6. Selvaraj, A.S. *Role of journals in the development of literary criticism in Malayalam.* Kerala. Dr. P.M. Joseph.

7. Sheelakumari, A. *Plays of Thoppil Bhasi : A study.* Kerala. Dr. V.S. Sarma.

8. Sisupalan, K. *Disintegration of 'Tharavadu' as reflected in Malayalam novel : A study based on selected novels.* Kerala. Dr. K. Prasobhan.

Geography

1. Mohammad Raja Miah. *Fluvial process.* BHU. Prof. N.K.P. Sinha.

History

1. Jangam, Jannappa Ashappa. *Freedom movement in Solapur District from 1885-1947.* Shivaji. Dr. B.N. Sardesai.

2. Rajamony, G. *Padmanabhapuram : A study.* Kerala. Dr. B. Sobhanan.

3. Ramadas, E. *The socio-economic changes among the Pulayas, 1900-1956.* Kerala. Dr. B. Sobhanan.

4. Shitiri, Chipani. *Socio-economic change among the Lothas of Nagaland, 1875-1973.* Panjab. Dr. R.I. Malhotra.

5. Yadav, Ram Narain Singh. *Gyata dharam katha : Ek sanskritik adhyayan.* BHU. Dr. Harihar Singh.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Bedi Silas, Satbir. *Arousal, persistence and intrinsic-extrinsic motivation effect on retention.* BHU. Dr. C. B. Dwivedi.

2. Dharitri, R. *A psychological study of hearing handicapped children.* Bangalore. Dr. (Mrs) Vinoda N. Murthy.

3. Irani, Shirin B. *A study of life satisfaction, role stress and personality dimensions among industrial workers.* Nagpur. Dr. Nelode.

4. Lal, B.N. *A study of democratic values, levels of aspiration and creativity in relation to Monobi and Teilingualism.* Rajasthan. Dr. T.B. Mathur.

5. Pandey, B.N. *A psycho-social study of religion.* Magadh. Dr. K.P. Krishna.

6. Pandey, Daya. *Sex-role orientation and its effect on susceptibility to learned helplessness of college girls : An empirical study.* Delhi.

7. Puri, Madhumati. *Effects of parental attitudes on the behaviour of mentally retarded children.* Delhi.

8. Rattan, Neelam. *Executive effective relation to personal self-perception and achievement motivation.* Panjab.

Sociology

1. Dube, Rajendra Prasad. *Jawaharlal Nehru : A study in ideology and social change.* BHU. Prof. S.K. Srivastava.

2. Hamilpurker, J.L. *The study of bonded labour in the context of agrarian social structure within the District of Hyderabad, Karnataka.* Gulbarga. Dr. L.S. Ainapur.

3. Nikhilesh Kumar. *A sociological study of medical profession.* NEHU. Prof. A.C. Sinha, and Prof. G.S. Aurora.

4. Rai, Suman. *A study of socio-economic conditions of rural women in Varanasi and some suggestions to improve their conditions.* BHU. Dr. (Mrs.) N. Sant.

5. Ramakant. *Varanasi ke Bengali abarajak samudaya : Samajik parivartan, samanjasya va asmita kee prakriya ka samaj vaigyanik adhyayan.* BHU. Dr. A.K. Joshi.

6. Ranade, Ravindra R. *Aspects of social choice.* JNU. Dr. Satish K. Jain.

7. Singh, Chandra Kala. *Audyogik shramikon mein swasthya kee samajik samasyayen : Mirzapur ke industrial wealth mein Hindalco Renukoot ke mazdooron per adharit ek samaj vaigyanik adhyayan.* BHU. Prof. S.N. Tripathi.

8. Singh, Renuka. *Status of Indian women : A sociological study for women in Delhi.* JNU. Prof. K L. Sharma.

Social Anthropology

1. Goswami, Basanta Kumar Deva. *A critical study of the Ramayana tradition of Assam upto 1826 A D.* Gauhati. Dr. N.C. Sarma.

2. Jain, Nisha. *Beedi mazdoor : Jeevan star evam sanskritik prishtbhoomi : Sagar Jile ke beeri mazdooron ka samaj shastriya adhyayan.* HS Gour. Dr. Ramesh Choube and Dr. Shri Nath Sharma.

Social Work

1. Matele, Vidya Dhar. *An assessment of a borstal in an Indian setting.* HS Gour. Dr. S.C. Tewari.

2. Verma, Ratna. *Psychiatric social work in India with special reference to practice of social work in mental health institutes psychiatric departments and child guidance clinics.* Delhi.

Political Science

1. Ghagada, Sulbha. *Bhartiya rajniti mein Rajyasabha kee bhumika.* Vikram. Dr. B.R. Sadh.

2. Shahid, A.S. *Foreign policy of Ghana, 1966-69,* JNU. Prof. Anirudha Gupta.

3. Tiwari, Anand Prakash. *Uttar Pradesh mein kisan andolan.* BHU. Dr. H.N. Tripathi.

4. Upadhyaya, Priyankar. *Nonaligned states and India's international conflicts.* JNU. Prof. K P. Misra.

Economics

1. Ajay Lal. *Madhya Pradesh mein arthik evam samajik sanrachana ka prajanan dar se sambandh : Shajapur Jile ke vishesh sandarbh mein.* Vikram. Dr. G.C. Khimesara.

2. Atul Lal. *Utpadan, aye tatha rojgar per krishi vikas ka prabhav : Shajapur Jile ke vishesh sandarbh mein.* Vikram. Dr. G.C. Khimesara.

3. Chauhan, B.S. *Kumaun evam Garhwal ke arthik vikas mein Kumaun evam Garhwal mandal vikas nigamon kee bhumika: Ek vishisht adhyayan.* Kumaun. Dr. P.C. Pandey.

4. Gupta, Satish Kumar. *A study of industrial estates in Jammu and Kashmir State with special reference to Jammu Industrial Estate.* Jammu. Dr. Amarjit Singh.

5. Joshi, H.C. *Grameen Kumaun mein vyavsayik parivartan evam prayas.* Kumaun. Dr. D.C. Pandey.

6. Kakkar, D.N. *Regional imbalances in economic development : A case study of Uttar Pradesh.* Kumaun. Dr. T.S. Papola.

7. Khan, T.M. *Devdas Jile mein sehkari samition ke ek arthik adhyayan.* Vikram. Dr. A.K. Bhattacharya.

8. Laharkar, S.N. *Sickness in beedi industry in Vidarbha.* Nagpur. Dr. Shamkuwar.

9. Mathew George. *Price profitability and employment in the handloom industry in Kerala.* CUST. Dr. V. Karunakaran and Dr. K.C. Sankaranarayanan.

10. Rajasenan, D. *Fishing industry in Kerala : Problems and potentials.* CUST. Dr. K.C. Sankaranarayanan.

11. Sambhar, Om Prakash. *Instability in Himachal agriculture.* HP Krishi. Dr. Parkash Mehta.

12. Sharma, Sandhya. *Role of prathma bank in agricultural development of Moradabad District.* Kumaun. Dr. P.P. Elhance.

13. Sharma, Vandana. *A model of capital and skill formation in an open economy.* JNU. Prof. Ashok Guha.

14. Sindhu, Bhavana. *Contribution of nationalised commercial banks towards technological development in agriculture: A study of District Saharanpur.* Roorkee.

15. Singh, Bal Prabhaker. *A study of institutional finance for agricultural sector in Kanpur District with special reference to advances and their utilisation in Bilhonr Block.* BHU. Dr. M.P. Singh.

16. Singh, L. Brajamandol. *Population growth and occupational pattern in a developmental process of the economy of scheduled tribes in Manipur, 1951-1981.* Manipur. Dr. L. Tombi Singh.

17. Singh, L. Krishnamangol. *Economic change in Manipur : Leading issues in development.* Manipur. Dr. M.M. Iboton Singh.

Education

1. Amin, Mahendrakumar Jashbhai. *To study the effectiveness of creative thinking programmes in the creativity level of the school children in relation to the programme correlates.* Patel. Dr. J.Z. Patel.

2. Bhatt, S.D. *Self disclosure and obedience tendency as determinants of students, perception of science teachers : A cross cultural study.* Kumaun. Dr. N. Hasnain.

3. Bohra, H S. *An empirical investigation of personality pattern of leaders and non-leaders among tribal and non-tribal Kumauni adolescents.* Kumaun. Dr. V.K. Sharma.

4. Desai, Nikhilchandra Nirmalchandra. *An investigation into the creative thinking ability of students of higher secondary of Gujarat State in the context of some psycho-socio factors.* Patel. Dr. I.A. Vora.

5. Dubey, Vijay Kumar. *Factorial nature of numerical aptitude and its bearing on mathematical learning.* BHU. Dr. C.P.S. Chauhan.

6. Hatibaruah, Kathita. *Educational programme for ommunity living with special reference to community development blocks of Kamrup District.* Gauhati. Dr. Lakshahira Das.

7. Jain, Kamna. *Bhartiya darshan mein nastik sampradaya ka shaikshik abhimukhikarana : Ek alochanatmak adhyayan.* Kumaun. Dr. A.R. Bisht.

8. Joshi, Dayawati. *Academic achievement dependence proneness, self disclosure and punctuality as determinants of creativity among students of Kumaun Hills.* Kumaun. Dr. N. Hasnain.

9. Pareek, Mathureshwar. *Vidyalayon mein shiksharat kishoron ke rainitik samaji karan ka vikasatmak adhyayan.* Rajasthan. Dr. C.M. Sharma.

10. Rai, Markandey. *Pt. Madan Mohan Malviya ke shaikshik vicharon ka adhyayan.* BHU. Dr. Tribhuwan Singh.

11. Rai, Ram Manohar. *Ghazipur Zanpad ke gramin kshetron mein prathamik shiksha ka sarvekshan.* BHU. Dr. C.P.S. Chauhan.

12. Ram, Baliram. *Kashi Hindu Vishwavidalaya ke adhyayanrat anusuchit jati ke chhatra-chhatraon ke rahan-sahan evam adhyayan kee sthiti ka ek vishleshanatmak sarvekshan.* BHU. Dr. T. Singh.

13. Sinha, Krishna Kumar. *A functional communicative approach to the teaching of written English for business purposes at the B. Com. level in Indian Universities.* Rajasthan. Dr. R.P. Bhatnagar.

14. Suthar, Jyotsnaben Keshavlal. *An investigation into the effect of caste effectiveness responsibility and sex of primary school teachers upon the pupils achievement.* Patel. Dr. (Miss) N.L. Pandya.

15. Yanadiah, Boyapati Syama. *A study of creative ability of secondary school students in the context of some psycho-socio factors.* Patel. Dr. I.A. Vora.

Commerce

1. Agrawal, Sarveshwar Prasad. *Capital structure of cement industry in U.P.* BHU. Dr. S.N. Mehrotra.

2. Gupta, Sohan Lal. *A study of commercial branch manager's effectiveness in relation to personality, job satisfaction and adjustment.* Panjab.

3. Mehar, Dharmender Nath. *Bunai udyog vikes evam sambhavnayen : Raigarh Jile ke vishesh sandarbh mein.* Ravishankar. Dr. U.S. Rastogi.

4. Pai, V. Santosh. *Lead bank scheme in Assam with special reference to Kamrup District.* Gauhati. Dr. D. Bharali.

5. Prasain, Ganga Prasad. *Industrial relations in Life Insurance Corporation of India.* BHU. Dr. M.N. Mishra.

6. Sagdeo, Arun P. *A study of the implementation of the social security measures in the cotton textile industry in Nagpur.* Nagpur. Dr. P.J. Deshmukh.

7. Sharma, Bipan Chander. *Strategy technology in B.H.E.L.* HP.

8. Singh, Radhey Shyam. *An investigation into the effects of job satisfaction, participation and job alienation on the performance of industrial workers : A case study.* BHU. Dr. S.N. Mehrotra.

Business Management

1. Verma, Jagdish Chandra. *Organisation and management of merchant banking in India and its impact on capital structure of corporate sector.* Delhi.

CLASSIFIED ADVERTISEMENTS

HIMACHAL PRADESH KRISHI VISHVA VIDYALAYA

'RECRUITMENT BRANCH'

Advt. No. 2/87

Applications are invited for the following posts on the prescribed form obtainable from the office of the undersigned personally or by making written request accompanied by self-addressed envelope of size 23 x 10 cms bearing stamp of Rs. 6/-. The detailed instructions regarding qualifications and other conditions etc. will be supplied alongwith the application form. The cost of application form for all posts is Rs. 10/- (Rs. 5/- for SC/ST candidates subject to production of proof therefor) which should be sent through IPO(s) payable to the Comptroller, HPKVV, Palampur at HPKVV Campus P.O. The application form duly completed should reach the Registrar, HPKVV, Palampur-176062 (HP) by **22.12.1987**. Request for supply of application form without requisite fee shall not be entertained.

Candidates applying from abroad may send their applications on plain paper giving full particulars of date of birth, examinations passed from High School onwards with division and percentage of marks obtained in various examinations, teaching/research/extension experience with a list of publication, if any, so as to reach the Registrar, HPKVV, Palampur by **29.12.1987**.

Faculty of Agriculture

Posts in the Scale of Rs. 1200-1900 (UGC)

1. Associate Professor of Agronomy (1)
2. Associate Professor of Vegetable (1)
3. Associate Professor of Plant Pathology (1)
4. Associate Professor of Home Management (1)
5. Associate Professor of Clothing & Textiles (1)
6. Plant Breeder (Oilseed) (1)
7. Agronomists (3)
8. Entomologists (2)
9. Scientist (Agricultural Economics) (1)
10. Scientist (Biogas) (1)
11. Extension Specialist (Extension Education) (1)

Posts in the Scale of Rs. 700-1600 (UGC)

12. Assistant Professor of Agronomy (1)
13. Assistant Professor of English (1)
14. Assistant Professor of Entomology (1)
15. Assistant Professor of Soil Conservation (1)
16. Assistant Professor of Soil Survey, Soil Classification and Mapping (1)
17. Assistant Microbiologist (1)
18. Assistant Scientist (Plant Breeding) (8)
19. Assistant Scientist (Tea Breeding) (1)
20. Assistant Scientist (Agronomy) (10)
21. Assistant Scientist (Entomology) (3)
22. Assistant Scientist (Agricultural Economics) (1)
23. Assistant Scientist (Plant Pathology) (6)
24. Assistant Scientist (Soil Fertility) Chemistry) (1)
25. Assistant Agricultural Engineer (Soil & Water Management) (1)
26. Assistant Soil Scientist (Water Management) (1)
27. Assistant Scientist Food Technology (Cereals) (1)
28. Assistant Genetist (Pulses) (1)
29. Assistant Residue Chemist (1)
30. Assistant Scientist (Agrostology) (1)
31. Assistant Scientist (Biogas) (1)
32. Assistant Vegetable Breeder (1)
33. Assistant Extension Specialist (Animal Science) (4)
34. Assistant Extension Specialist (Extension Education) (2)
35. Assistant Extension Specialist (Agronomy) (2)
36. Assistant Extension Specialist (Vegetable Breeding) (1)
37. Assistant Extension Specialist (Plant Pathology) (1)

Faculty of Veterinary & Animal Sciences

38. Associate Professor (Surgery) (1) in the Scale of Rs. 1200-1900 (UGC)

Posts in the Scale of Rs. 700-1600 (UGC)

39. Assistant Professor (Anatomy) (1)
40. Assistant Professor (Histology) (1)
41. Assistant Professor (Physiology) (1)
42. Dairy Manager (1)
43. Assistant Scientist (Animal Production-Poultry) (1)

Applications which are incomplete or are received after due date shall not be entertained.

R.C. Kapil
REGISTRAR

SARDAR PATEL UNIVERSITY

VALLABH VIDYANAGAR
(Gujarat)

Notification No. EST/4 (1987-88)

WANTED

I. **Professor of :** (1) Statistics (2) Commerce (Business Management preferably M.B.A.) (3) Computer Science (M.C.A. Course) :
Pay Scale : Rs. 1500-2500.

II. **Reader in :** (1) Computer Science (MCA Course) (2) Chemistry (Two posts) One in Co-ordination Chemistry and Second in Industrial Chemistry (3) Home Science (Two posts) Foods and Nutrition (4) Library Science.
Pay Scale : Rs. 1200-1900.

III. **Lecturer in :** (1) Physics (Two posts) Electronics Science (2) Chemistry (Physical/Polymer) (3) Mathematics (4) Home Science (Child Development) (5) Computer Science (MCA Course) (6) Commerce (7) Gujarati (8) Sanskrit (9) Bio-Chemistry (10) M.B. Patel College of Education (Geography / Economics Methods & Educational Technology.
Pay Scale : Rs. 700-1600.

IV. **Non-teaching posts :** (1) Development Officers (2) Senior Scientific Officer (3) Co-ordinator (For Exam Reform Unit) (Temp.) (4) Statistician (Temp.) (5) Workshop Superintendent (Mech.) (6) Deputy Accountant (7) Biological Asstt. (8) Research Associate in Hindi (Linguistics & Stylistics) (Temp.).

Pay Scale : For (1), (2), (3) and (4) Rs. 3000-4500 and for (5) Rs. 2200 4000 (6) Rs. 2000-3500 (7) Rs. 1350-2200 (8) Rs. 1800/- fixed.

All posts except at Sr. No. IV(3) & (4) carry benefits of Dearness Allowance, G.P.F., Gratuity & Pension as per University rules. Posts at Sr. IV (3) & (4) carry D.A. only. Qualified candidates from SC/ST will be given preference. SC/ST candidates must attach bonafide certificate from proper authority.

Applications for the above posts

must be made in the prescribed forms available on payment of Rs. 5/- in cash or by I.P.O. to the University. Detailed qualifications will be supplied with the forms. The last date for receipt of applications is 31-12-1987.

R.C. Thakkar
REGISTRAR

SUKHADIA UNIVERSITY
UDAIPUR

Advertisement No. 6/87

Dated : 21.11.1987

Applications are invited on prescribed application form for the following posts in Teaching on regular basis in the University. The application form and **FULL DETAILS ABOUT QUALIFICATIONS AS PRESCRIBED BY THE UNIVERSITY etc. can be obtained from Shri A.L. Sahlot, Deputy Registrar (Recruitment), University Administrative Office, Sukhadia University, Udaipur. Pin-313001, on PAYMENT OF Rs. 5/-** through Crossed Indian Postal Order payable to the "Comptroller, Sukhadia University, Udaipur" alongwith a self-addressed envelope of 27 cms. x 12 cms. size bearing Postal Stamps of Rs. 2.20 only **and send the application form duly completed in all respect on the same address upto 21.12.1987**.

Those candidates who have already applied for these posts in response to our previous advertisement No. 2/86 dt. 25.1.86, 11/86 dt. 27.12.86, 1/87 dt. 29.1.87 and 3/87 dt. 17.6.87 **need not apply again**, but they should please send their fresh Bio-data (one side typed) on plain paper to update the same.

1. PROFESSOR : PAY SCALE : Rs. 1500-60-1800-100-2000-125/2-2500.

1. Political Science —1
2. Meera Chair (Rajasthani) —1
3. History —1

2. ASSOCIATE PROFESSOR : PAY SCALE : Rs. 1200-50-1300-60-1900.

1. Rajasthani —1
2. Hindi —1
3. Physics —1
4. Commerce (Accounts & Statistics) —1
5. Commerce (Banking & Business Economics) —1
6. Commerce—Business Management —2
   Specialization in Production/Finance/Personnel/Marketing
7. Senior Research Officer/Deputy Director —1
   (Population Research Centre)

3. ASSISTANT PROFESSOR : PAY SCALE : Rs. 700-40-1100-50-1600.

1. Political Science —2
2. Rajasthani —1
3. Hindi —1
4. History —1
5. Economics —1
6. Drawing & Painting —1
7. Chemistry —3
8. Mathematics —1
9. Zoology —1
10. Law —2
11. Geography —2
12. Botany —1
13. Research Officer —1
    (Population Research Centre)
14. Commerce : Business Management —1

Qualifications : A Master's Degree in Business Administration (M.B.A.) or M.Tech. in Engineering with Ist class with the provision that the incumbent would acquire a doctorate degree within a period of Eight years.

General Note

1. Number of posts may be **Increased or Decreased**.
2. Application forms received after the expiry of the last date may also be considered at the discretion of the Vice-Chancellor.
3. 16% post would be reserved for Scheduled Caste and 12% for Scheduled Tribes, subject to general suitability.
4. A higher start in the grade may be considered for exceptionally qualified candidate.
5. **The University Reserves the Right not to fill up Post(s) Advertised.**

G.S. Sharma
REGISTRAR

इन्दिरा गांधी राष्ट्रीय मुक्त विश्वविद्यालय
INDIRA GANDHI NATIONAL OPEN UNIVERSITY

YMCA Cultural Centre, 1-Jai Singh Road
NEW DELHI-110 001

Advertisement No. 5/Admn./1987

Applications are Invited from Indian Citizens for filling up the post of Lecturer in Women's Education in the Indira Gandhi National Open University :—

Qualifications

Essential : M.Sc— Home Science in Child Development/Nutrition as special subject, with at least 55% marks or its equivalent grade and good academic record or an equivalent degree from a foreign University

Desirable : A Doctor's degree in the relevant subject or research work of an equally high order.

Eligibility

Only those candidates who, besides fulfilling the minimum academic qualifications in the above, have qualified in a comprehensive test to be conducted by the University for the purpose will be eligible for consideration for appointment as Lecturer.

The details of the comprehensive test as well as place at which such tests would be conducted would be intimated to the candidates at least a month in advance.

Additional Qualification

Experience and proven ability in imparting education through communication media and innovations in distance teaching methods and materials :

Job Requirement

Academic staff of this University will have the following responsibilities.

1. Curriculum and Course development.
2. Preparation of self-instructional print material.
3. Preparation of and participation in the production of audio video materials :
4. Participation in contact programmes, workshops week-end programmes summer institutes, face-to-face teaching etc.
5. Undertaking of research-individual, institutional, sponsored etc.

Scale of Pay : Rs. 2200-75-2800-100-4000 plus usual allowances as admissible under the University rules.

In addition to pay, the post carries all allowances as per University rules. Higher start in the prescribed scale may be given in deserving cases on the recommendation of the Selection Committee. Provident Fund/Pension, Gratuity, Leave Travel Concession, Medical reimbursement and leave will be admissible as may be approved by the University.

The prescribed application forms can be had from the Registrar, Indira Gandhi National Open University, YMCA, Cultural Centre, Jai Singh Road, New Delhi-110001, on a written request by post and accompanied by a self-addressed envelope (size 13cms x 28cms) bearing postage stamps of Re. 1.00. Completed application forms alongwith attested copies of degrees, other certificates, marksheets, published research articles, experience, etc. should reach the Registrar at the above address on or before **28th December, 1987.**

The originals of the above degrees/certificates should be produced at the time of interview.

15% and 7 1/2% of the total number of vacancies of Lecturers are reserved for Scheduled Castes/Scheduled Tribe candidates respectively. If no suitable candidates found from SC/ST categories, the posts will be treated as un-reserved and selection will be made from general candidates.

Candidates called for interview from outside Delhi will be paid single second class railway fare to and fro by the shortest route from their place of residence/work.

Canvassing in any form by or on behalf of a candidate will be a disqualification.

Applications received after the last date or without complete information will not be entertained.

The University reserves the right not to fill up the vacancy advertised if the circumstances so warrant.

REGISTRAR

UNIVERSITY OF LUCKNOW

Advertisement No. 6/1987

WANTED

Professors (Rs. 1500-60-1800-100-2000-125/2-2500)

1. One in Physics (Specialisation in Experimental Solid State Physics).
2. One Pure Mathematics.

Readers (Rs.1200-50-1300-60-1900)

3. One in Economics
4. One in English
5. One permanent and one temporary in Medieval & Modern Indian History.
6. One temporary in Geology

Lecturers (Rs. 700-40-1100-50-1600)

7. One in Political Science
8. One in English
9. One in Ancient Indian History & Arch.
10. One permanent and one temporary in Western History.
11. One temporary in Western History for teaching History & Culture of Asian Peoples.
12. One permanent and two temporary in Sanskrit
13. One temporary in Sanskrit in the Abhinavgupta Institute of Aesthetics & Shaiva Philosophy.
14. One in Chinese.
15. One temporary in Physics
16. One temporary in Business Administration.

Minimum Qualifications for Professors

Eminent scholarship with published work of high quality and active engagement in research and ten years' experience of teaching or research and experience of guiding research at doctorate level,

OR

Outstanding scholarship with established reputation for significant contribution to knowledge.

Minimum Qualifications for Readers

(a) Good academic record with a doctorate degree or equivalent published work, and active engagement in research or innovation in teaching methods or production of teaching materials; and

(b) Five years' experience of teaching or research including at least three years as Lecturer or in an equivalent position.

Provided that the requirement contained in clause (b) may be relaxed in the case of candidate who in the opinion of the Selection Committee has outstanding research work to his credit.

Minimum Qualifications for Lecturers

(a) A doctorate degree or research work of an equally high standard in a relevant subject; and

(b) Consistently good academic record with first or high second class Master's degree or an equivalent degree of a foreign University in a relevant subject.

General

Benefits of Provident Fund/Pension available as admissible under the rules. Period of probation for permanent post is one year.

It is not necessary to fill any/all of the advertised posts. Canvassing will be a disqualification.

Prescribed application form can be obtained free of cost, by sending a self-addressed envelope size 23 x 10 cm. with postage stamp worth Rs. 5.50 to cover registration charges, from the office of the Registrar. Last date for submission of application duly completed in all respects with recent testimonials, publication, etc. and Bank Draft for Rs. 5/- drawn in favour of the Registrar, Lucknow University (Postal Order or Money Order will not be accepted) payable at any Bank in Lucknow, is **December 31, 1987.**

Those who have applied for posts at sl. no. 2, 4, 5, 8, 12 & 14 in response to our Advertisements No. 1/1986 dated 30.1.1986 and No. 2/1986 dated 13.5.1986 need not apply afresh as their old applications will be considered. Such candidates may, however, intimate their additional qualifications and attainments during this period for their specialisation in the respective field.

Applications without Bank Draft will not be entertained. Candidate who are in service should send their applications through proper channel. Application forms to out-station candidates will be sent upto **December 24, 1987.**

B.M. Singh
REGISTRAR

HARYANA AGRICULTURAL UNIVERSITY
HISAR
ADMISSION NOTICE

Applications are invited for admission to the following programmes from 2nd semester of the academic session 1987-88 commencing from 1.2.1988. The last date fixed for receipt of applications in the Registrar's office (through proper channel in case of inservice candidates) is **31.12.1987.** No days of grace will be allowed. The eligible candidates should present themselves for interview on the date and time mentioned below against each programme in the Committee Room of Dean, PGS, HAU, Hisar. No separate intimation regarding interview will be issued :

1. Ph.D.
2. M.V.Sc.
3. M.V.Sc. (Animal Sciences) vacant seats only.

Ph.D.

Discipline 1	Date of Interview 2	Time 3	Minimum qualifications 4
College of Agriculture Entomology, Extension Education, Horticulture, Nematology, Plant Pathology, Plant Breeding, Soil Science, Vegetable Crops, Ag. Economics and Agronomy.	11.1.1988	9.30 A.M.	The minimum qualifications for admission of fresh as well as in-service candidates shall be 60% marks or a grade point average of 3.2 (4.00 basis) at the Master's level in the subject concerned (Specific detail of subjects of Basic Science disciplines is as given below) and 56% marks or grade point average of 2.50 (4.00 basis) at the Bachelor's level.
College of Basic Sciences Bio-Chemistry, Botany, Plant Physiology, Genetics Microbiology, Rural Sociology, Zoology and Statistics.	12.1.1988	9.30 A.M.	Botany: M.Sc. (Botany/Life Sciences/ Bio-Sciences).
College of Vety. Sciences Vety. Anatomy, Gynaecology and Obst., Medicine, Micro-biology, Parasitology, Pathology. Pharmacology. Physiology, Public Health and Surgery.	13.1.1988	9.30 A.M.	Plant Phy. : M.Sc. (Pl. Physiology/ Botany/Bio-Sciences/Life Sciences).
College of Animal Sciences Animal Breeding, Animal Nutrition, Animal Production. Physiology and Livestock Production and Management.	14.1.1988	2.30 P.M.	Zoology : M.Sc. (Zoology Life Scs. Bio Scs.) Rural Sociology : M.Sc. (Sociology Soc. Scs.).
College of Home Science Foods and Nutrition and Home Science Extension Education	14.1.1988	9.30 A.M.	Biochem : M.Sc. (Bio-Chem./Molecular Biology/Bio-Technology/ Chemistry/Microbiology) Stat : M.Sc. (Statistics/Mathematical Stat./ Applied Statistics) Gen : M.Sc. (Genetics/Plant Breeding/ Botany/Bio-Sci./Life Sci. Molecular Biology/Microbiology/ Biotechnology).

1	2	3	4
			Microbiology : M.Sc. (Microbiology/Biochem./Biosciences/Life Sciences/Molecular Biology/Genetics.
	First preference will be given to the discipline of the Department.		
2.	**M.V.Sc.**		
	College of Vety. Sciences		
1.	Vety. Anatomy	15.1.1988 9.30 A.M.	B.V.Sc. and A.H. or B.V.Sc. with equivalent prog. of work and equivalent duration of period of training, with a grade point average of 2.50 (4.00 basis) or 56% marks (Where OGPA is not given) and above.
2.	Vety. Gynaecology and Obst.		
3.	Vety. Medicine		
4.	Vety. Microbiology		
5.	Vety. Immunology		
6.	Vety. Parasitology		
7.	Vety. Pathology		
8.	Vety. Pharmacology		
9.	Vety. Physiology		
10.	Vety. Public Health		
11.	Vety. Surgery.		
3.	**M.V.Sc. (Animal Sciences)**		
	College of Animal Sciences		
1.	Animal Breeding	15.1.1988 2.30 P.M.	-do-
2.	Animal Nutrition		
3.	Animal Production Physiology		
4.	Animal Feed Technology		
5.	Animal Products Technology		
6.	Live Stock Production and Management.		

How to Apply

Prospectus alongwith the admission form is obtainable from the Asstt. Registrar (Academic), HAU, Hisar-125004 on payment of Rs. 10/-in cash at the Counter or by sending an Indian Crossed Postal Order worth Rs. 15/- payable to the Asstt. Registrar (G), HAU, Hisar at the HAU Post Office, Hisar. Complete application form should be sent to the Asstt. Registrar (Acad.), HAU, Hisar. Incomplete admission forms will not be considered.

Fellowships and Stipends

Available on the basis of merit and on fulfilment of prescribed conditions as laid down by the University and approved by the Academic Council.

Notes

(i) All candidates are expected to bring original certificates etc. on the date of interview, failing which they may be refused admission.

(ii) The inservice candidates shall be employees of the HAU, Agriculture, Animal Husbandry Deptt. of the State Government and ICAR institutes located in Haryana, having experience of atleast 3 years of teaching, research/extension education in their organisation/Universities.

(iii) Pure M.Sc. or B.Sc. candidates are not admitted to the College of Agriculture.

(iv) Ist list of selected candidates in all the disciplines will be displayed by 25.1.88 to enable the candidates to get themselves registered by 27.1.88. Second list, if necessary, will be displayed on 29.1.88 to allow registration by 30.1.88 and 3rd list, if necessary, will be displayed on 1.2.88 to allow registration by 2.2.88. No separate intimation for the selection will be sent.

REGISTRAR

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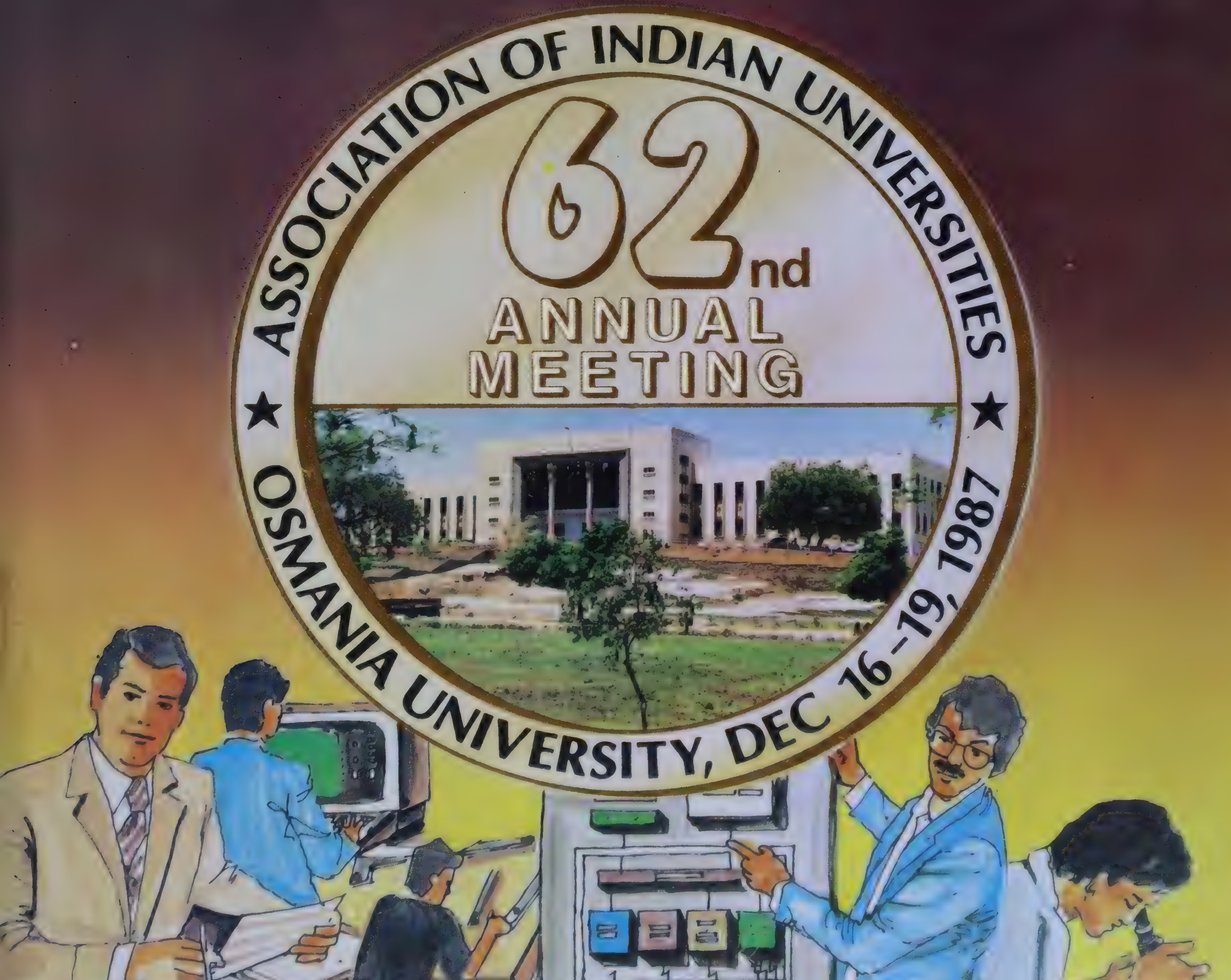
University News

SPECIAL ISSUE


ASSOCIATION OF INDIAN UNIVERSITIES
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Osmania University, December 18-19, 1987

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British Book in Print 1987 4 Vols. Set	£ 130.00
Commonwealth University Year Book 1987 4 Vols. Set	£ 83.00
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UNIVERSITY NEWS

Vol. XXV

No. 50

A Weekly Chronicle of Higher Education Published by the Association of Indian Universities

December 14

1987

Price : Rs. 10.00

SPECIAL ISSUE

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Editor :
SUTINDER SINGH

Challenge for Change

This special issue of 'University News' is dedicated to the National Conference on the Role of Universities in Implementation of New Education Policy being organised on the occasion of the 62nd Annual Meeting of the Association of Indian Universities to be held at Osmania University, Hyderabad on 16-19 December, 1987. The Conference, organised in collaboration with the Osmania University, will be held on 18-19 December, 1987.

Education is a key input for the nation's development. Its integrated development is no ambitious luxury for a country like India that is committed to technological modernisation and mitigation of widespread poverty. The Programme of Action document listing implementation strategies for the New Education Policy (NEP) though marked the directions of advance, failed to provide a time bound programme. This was all the more conspicuous because of the absence of financial estimates for different components of the policy. The stipulation in the policy that the target on investment of education will be of the order of 6 per cent of the national income by 1990 itself suggested a longer phasing out for the new policy. The financial crunch was felt in the very first year. A bold attempt was made at salvaging the policy by allocating Rs. 824 crores for education for the year 1987-88 as against Rs. 315 crores for the year 1986-87. Another redeeming feature was the Prime Minister's assurance that programmes of rural development like the National Rural Employment Programme (NREP), the Integrated Rural Development Programme (IRDP) and the Integrated Child Development Services (ICDS) would be integrated with the implementation of the NEP and their budgets would supplement educational expenditures. The problems of financing the NEP cannot be resolved unless educational expenditure, except at the elementary stage, is extricated from 'subsidy syndrome'. Proposals such as raising of fees in educational institutions, especially in technical and professional colleges, need to be acted upon in all sincerity. Case for levying a special cess on industry is another promising option. Industrial units need be encouraged to adopt educational institutions not only to provide financial support to them but also for bringing about a symbiotic interaction between education and industry. Emerging culture of university-industry nexus and the upcoming Technology Parks are a step in the right direction and are to be welcomed. A word of caution is, however, necessary. While linking university education to the cost of education it should be ensured that this prescription does not deprive weaker sections of society of the opportunities for higher education. In the interests of social justice a system of scholarships and educational loans has to be built up to assist students from weaker sections like scheduled castes and scheduled tribes and other lower income groups. Another suggestion that merits serious consideration is the need for 'specialized institutions for providing loans to students pursuing higher education including professional courses, which could perhaps combine career counselling with financial assistance'. Another area of concern is that cost linked higher education may whip up commercial motives on the part of private managements. There has to be a much greater degree of social audit than is possible in the present system of university affiliation.

Challenge of the future is indeed a challenge for change.

The General Body of the Association of Indian Universities meets at Hyderabad in its 62nd Annual Session on 16-17 December 1987. A number of important issues are expected to come up for discussion. The meeting will have an occasion to deliberate on the principles of equivalence and recognition of innovative courses at undergraduate and postgraduate levels. It is important that the guiding principle of equivalence of new interdisciplinary and multidisciplinary courses is the level of intellectual concepts than identicality of topics. It will also take up the question of evolving suitable conventions that may be followed by the central and state government agencies to ensure respect for university autonomy. The role of universities in Education for Women's Equality and in solving problems of the people of the area around them will also be discussed. Introduction of Military Science (NCC) as part of university syllabus, adoption of model regulations for three year degree courses and discontinuance of issue of migration certificates by universities are other important topics that will engage members attention. The role of universities in matters relating to foreign students, and also in the programme of Health for All by 2000 A.D. will also come up for discussion. We wish both the National Conference on Role of Universities in Implementation of New Education Policy and the Sixty Second Meeting of the Association of Indian Universities a grand success. May their deliberations be marked by vision and wisdom !

UNIT
DEC
C.F.T.R.I., MY

UNIVERSITY TO BE A UNIVERSITY

Malcolm S. Adiseshiah*

The first task of our universities to promote and complement the National Educational Policy is for them to be universities—that is to be centres where their only functions of teaching and research are based on and lead to the unity of knowledge. At this time when knowledge is increasing at a rapid and accelerating rate, both horizontally and vertically, there is a danger that the universities (a) may find themselves bypassed by the fast moving knowledge stream, and get stuck in outdated and outworn curricula and syllabus (which is fast becoming a reality in our universities), or (b) may dabble rather lightly and superficially in a number of frontier areas of knowledge which would make the university a multivarsity (which is happening to a few of our universities only because most have not entered the frontier areas), or (c) may occupy themselves with irrelevancies—irrelevant in relation to their only purpose which is to pursue the unity of knowledge—such as conducting examinations on a state wide or zone wide basis, operating the various procedures for the affiliation of colleges and spending time and effort running Boards of Studies for establishing their curricula and textbooks, and getting involved in the political manoeuvres of the state and university, alongwith trade union type activities (which have become the order of the day in our universities).

For our universities to turn around and regian their vocation as purveyors and seekers of the unity of knowledge, which they must be to help implement the National Education Policy, a number of negative steps have to be taken, to "debarrasse" them from their current irrelevant preoccupations.

Sans Examinations

A first such step is for the university to shed its preoccupying and useless burden of running a burdensome, unscientific and antiquated examination system for its departments and affiliated colleges, and in its place pioneer and take responsibility for reform of the examination system, whose administration, however, should not be centralised. The National Education Policy sets forth quite clearly the major lines along which the examination system should be reformed to become an effective evaluation process which is part of any learning system. The main lines of the suggested reform are (i) to shed the present external, memory testing, end of the year or end of the course examination system, (ii) to replace it by the semester system and its accompanying continuous internal assessment, involving appropriate changes in instructional materials and teaching methodology, (iii) to replace the essay type questions by objective, short answer ones set by those who teach the course, and (iv) to move to a credit system instead of a fixed core and optionals curriculum for every learner (described by the National Education Policy as "increasing flexibility in the combination of courses") and the replacing of marks by grades in assessing the learning attainments, etc. What the National Educational Policy does not say is, who is to administer this reformed evaluation/examination system. My answer is : (i) it should not be a centralised system administered by the university or UGC or PSC or any other central body, for further the assessment gets from the assessee, the less of assessment of the individual's learning does it become ; (ii) it should be devised and operated by each learning unit—the university department, the college and the research institution, with the university coordinating and laying down guidelines for the system. (This would mean dismantling a great part of the unwieldy registrar's office, particularly the vast controller of examination office, but that is what will make the university a teaching and research agency). Such a system would also facilitate the delinking of degrees from jobs in selected areas, which should be allowed to evolve gradually and naturally.

Sans Affiliated Colleges

A second imperative for the university to regain its vocation as a university is to shed the system of 'affiliated' colleges that we have invented in India Lord Curzon, when he laid down office, muttered into his beard about the baneful future effects of the system of affiliated colleges that the British Raj was leaving behind. The National Education Policy, following the Kothari

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Commission report and the isolated exception of the University of Madras, speaks of making one tenth of the affiliated colleges 'autonomous' (and also some of the university departments). There is no such thing as an 'autonomous' college, because that is what all colleges are everywhere, except in this subcontinent. Here I am not concerned with the importance of freeing the colleges to develop according to their creative agencies. I am concerned with relieving the university from the non-university, non-academic burden of looking after, spoon feeding and administering the system of affiliated colleges, which takes away the time and expertise it needs to develop as a teaching and research body pursuing the unity of knowledge. This principle also applies to the departments of the university, which are bound down academically by the Boards of Studies which cover both the colleges and the departments (and in which the former predominate) and administratively and fiscally by the office of the registrar. So a start may be made by freeing as many colleges and university departments from this spider's web controls and giving them each their head to develop their innovativeness and creativity. This may be objected to on two grounds. First, that such freedom to colleges and departments will lead to their running amuck. (This was what was said about us by our past rulers, whenever the question of our independence came up, and I would recall Gandhiji's startling repay to this : 'leave us to God and chaos'.) There is no doubt that some colleges and some departments will fall by the way side and wither away. They should be allowed to do so, but the rest will be free, creatively free. A second objection is that this may mean further dismantling the registrar's office and the addition to the educated unemployment of the country. The re-employment of the excess staff from the registrar's office by the free colleges and departments for their own use would be one way out. But the university to be a university—an intellectual centre—needs a lean administration to replace the current bloated one.

Sans Politics

A third step to help universities turn around is to reduce, if not eliminate their politicisation. For this there should be no means of outside interference with the academic life of the university, and no means of university personnel seeking and obtaining outside patronage. One way to ensure the depoliticisation of the university is to make the accession of its main officers—vice-chancellors, deans, heads of departments, registrars—automatic by a system of rotation. The Vice-Chancellorship should go by rotation every three years to the senior most head of department. The Deanship and Departmental Headship should by rotation go to the senior most department head and Professor. The Registrar should be the senior most of the administrative staff of the university. The same principle of rotation should apply to membership of the staff in the senate/court, and syndicate/executive council. The government or legislature should have no power to appoint Vice-Chancellors or influence teachers' appointments. The President or Vice-President of the Republic should be the visitor of the university, with no offices of chancellors or pro-chancellors. There are two objections advanced to this proposal. First that not every senior head of department is qualified to be the Vice-Chancellor, that not every professor may be willing to be head of department, that not every head of department may be agreeable to be a Dean. It should be clear that an academic's freedom not to accept any of these positions should be fully protected and maintained. As for the ability to be a vice chancellor (or dean or head of department), it is time that the present false aura surround these offices, particularly the vice-chancellorship be ended. When I became the vice-chancellor in the University of Madras, I found to my horror that people entering my room took off their shoes, as they do in the presence of God. The vice-chancellor (like the dean and department head) is only the primus interpares. In any case even if the vice-chancellor (or dean or department head) is unsuitable that will be only for that period of 3 years, and in any case whether he/she would be more unsuitable than the present incumbents should be frankly faced. The first tentative steps taken by the Jawaharlal Nehru University in this direction need to be studied and followed by other older universities, to start with.

Curricular Reform

The new education policy rightly calls attention to the need for curricular reform in the universities and in this matter lays down the following guiding principles which each university should apply and follow, namely :

—A core sector which will provide an opportunity to students and teachers "to reflect on the critical, social, economic, cultural, moral and spiritual issues facing India and humanity", including the National Policy affirmation that "Education can and must bring about a fine synthesis between change oriented technologies and the country's continuity of cultural tradition",

—Basic knowledge of each discipline including the 'unchartered areas',

—A density of specialisms and skills,

—Interdisciplinary systems which will be problem oriented.

UGC has set forth and is working on guidelines and modules in the above areas which could be of use to each university in its curricular restructuration.

In this curricular reform area, university teaching needs to be integrally linked to its relevance to the community. This can be done very simply by testing classroom, library or laboratory learning to the conditions existing in our poverty stricken villages or urban slums. Thus the physics students and teachers can test their learning by helping the farmers and artisans to repair their instruments; the chemistry students and teachers by testing the chemistry of the soil and advising the farmers on the appropriate crop and seed and fertiliser to be used; the biology students and teachers on solving the problems faced by the dairy or poultry farmers; the commerce students and teachers helping the village cooperatives to keep their account books; the political science students and teachers in helping the village panchayat to run its affairs and relate their activities to those of the block, etc. This would require that each board of studies should prescribe in its curricula and text and reference books, the application of the learning to rural and urban condition facing society. This will give university learning a new dimension, will provide a feedback to the boards on the changes needed, influence university research and act as a bridge between the unban based university which the majority of our universities are and the proposed expansion of rural universities.

The National Policy also calls attention to the special responsibility of the universities for "teacher orientation and preparation of teachers at the beginning of the service as well as the continuing education thereafter". One effect of the knowledge explosion which was referred to at the beginning is that no longer are "teachers born" as they were assumed to be in my days, so that to be a school teacher all you needed was a graduate degree, and to be a university lecturer, post-graduation and some introduction to research as in M. Phil which were regarded adequate. Today, the teachers at all levels, particularly at the university level, have to be trained to be teachers, and for this every university needs to make provision for such training of its teachers, including the transformation of teaching methods and the use of audio visual aids and electronic equipment. In such training, each university can obtain help from the Academy of teacher training that is to be set up to cover groups of universities in each state, as well as from the open university systems which are fast developing.

Research

Research is today in a parlous position in our universities. It is fragmented in so far as research in the sciences and humanities is taking place mainly outside the university in CSIR, ICAR, ICMR, DAE, DSC, ICSSR, ICPR, ICHR, etc. Its quality is not high in that, except in agriculture, it has made no contribution to fundamental research nor is it mission-oriented. In the words of the Abid Hussain CSIR committee 'our research is characterised by mediocrity'.

Under these conditions, it is important that there should be greater intellectual ferment and curiosity among our professors and closer interaction between the research agencies. The National Education Policy refers to "a national body covering higher education in general, agricultural, medical, technical, legal and other professional fields" to be set up. The Prime Minister's Science Advisory Council has recommended a National Science Foundation to both coordinate and in a sense control and monitor all research. These are moves in the right direction, and should result in the university playing its role—not necessarily the major role—in research, except in fundamental research, where the university should be the agency concerned, and any others engaged in fundamental research should be required to work with or under the university. This is parallel to working for a Ph.D. degree which is the responsibility of the university. Any one wanting to do his doctorate has to do it under the aegis of the university. So too in fundamental research, which is the base for all research and all development, the university should be the base agent. For this, the universities should be adequately equipped, which they are not today; the National Policy's pledge of "enhanced support to university research" should mean this—the provision of necessary equipment, laboratories and facilities for basic research. All this provides the setting, the infrastructure for research; its quality and standard depends on the research worthiness, commitment and dedication of our university professors.

(Continued on Page 46)

Five Areas of Concern in Educational Policy and Planning

Tarlok Singh*

Between the **Challenge of Education : A Policy Perspective** issued by the Ministry of Education in August 1985, and the **National Policy on Education : Programme of Action** issued in August 1986, lay a period of intense discussion among educationists at all levels and in all parts of the country. The final document, the Programme of Action, constitutes a formidable agenda of work and a set of promises to be fulfilled over the next decade or so. The burden of initiating and carrying forward the debate and now of implementing the total commitment represented by the new educational policy has fallen to far too great an extent on one agency of the Central Government, now described as the Department of Education in the Ministry of Human Resource Development.

I

As we look ahead in the mid-year of the Seventh Plan, this very fact seems to emerge as the first major area of concern in achieving all the components of the Programme of Action. The fact that the Programme to the very end has presented concepts, proposals and directions of advance, and has not been made sufficiently specific in terms of schemes and projects ready for execution to the maximum extent feasible, and given numbers in personnel and amounts of public and private outlays to be made, is likely to remain a serious source of weakness. In plain terms, what it means is that, despite overall approval by the Union Cabinet, the complete commitment of the Planning Commission and the Ministry of Finance from year to year and till the end of the journey cannot be hastily assumed. Every major proposal may be subjected to detailed examination, reference to the educational policy being in practice an inadequate shield against heavy cuts in allocations of resources. Contingencies will arise in the future, as they have arisen in the past, to strengthen the moral belief of planning and finance agencies that in giving less to educational programmes than their due, they are still serving the wider national interest. Again, as in the past, higher and technical education may escape lightly, but primary and elementary education, non-formal education, reorientation of secondary education along vocational lines, and eradication of mass illiteracy, specially illiteracy among women and among scheduled castes and tribes and other backward classes, will continue to be at risk. These issues have still to be dealt with squarely by all concerned without resort to routes of escape. Therefore, the Ministry of Human Resource Development, the Planning Commission and the Ministry of Finance have now a moral obligation to face the financial and administrative implications jointly and to put their collective commitment beyond the pale of doubt. If the doubt itself be even partly misplaced, so much the better; let the common commitment be frankly reaffirmed as soon as possible and made known to the States and the general public.

II

The Centre has a large and direct role in promoting and guiding several branches of higher and technical education. But by far the larger part of educational activity is influenced by the States. This is true of university and college education and still more true of secondary, elementary and vocational education, of non-formal programmes, of mass literacy, post-literacy and continuing education. The nearer we get to the people, to the base of society in rural and urban areas, the larger is the role of the States and of agencies associated with them, such as municipal and Panchayati Raj institutions, and the greater part of industry situated in large cities and small towns within each state. In other words, a national education policy cannot be much more than a framework within which there are specific and well-prepared programmes atleast upto the State level, formulated with care and precision, and carrying the authentic commitment—political, administrative and financial—of the State Government. Only when such a commitment is available, does it become possible to secure the unreserved support of the state legislature and of public opinion. In this sense, despite conferences of state ministers and state officials at various stages upto the formulation of the education policy in its final vesrion, the consultations which took place appear to have been in general terms without corresponding goals being determined by each state and constituting its own defined component in the

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**Former Member, Planning Commission.*

national plan. As a consequence, while broad national goals are set out in the education policy, their state components are not available. For all practical purposes, specific action continues to be taken on a year to year basis.

There is a second aspect of the source of weakness which has been indicated above. In several branches of education, notably in the rural areas, educational activities have both to draw support from and to penetrate into other developmental activities. This objective has been often stressed and is readily accepted in principle. The education policy has left most of the relevant decisions for achieving such coordination to the future, both at the national level and in the states. To an extent, the steps initiated in support of Operation Blackboard may suggest that action to improve primary education is well in hand, but action on the other components affecting the education of the great bulk of the people, which call for more concerted approaches, appears to be lagging behind for the very reasons which have been outlined earlier. Thus, in the planning and implementation of the education policy which has been formally approved, one can still observe large grey areas as we move from the national level to the states and from the state level to the districts and below.

III

For several decades there has been the realization that school education at various stages has to be diversified so that substantial numbers move into vocational courses and from there into employment, with the opportunity later to re-enter the mainstream for higher qualifications if they so desire. The Education Commission (1966) visualised that at the eight plus stage about 20 per cent and at the ten plus stage about 50 per cent of students would move from the general stream to take up vocational courses. A large number of seminar reports and reports of expert groups are available, the last and the most detailed of these being the Report of the National Working Group set up by the All India Council for Technical Education (August 1986). The proposals of this group form the basis of the Programme of Action for the new education policy. As has been stated in this document, the present intake into vocational courses is no more than 2.5 percent of the student population entering the higher secondary stage.

The reasons for failure to make a significant advance in vocationalisation at different stages in school education are known and have been described at some length in the Programme of Action. The single most imoportant cause is stated to be the inadequate organisational structure. To remedy this, a series of proposals have been made. These cover extensive ground, including several new institutions at the national and state level, development of linkages, programmes for vocational education, development of non-formal programmes, teacher training, and measures to facilitate employment. The goals set are the diversion of 10 per cent of the students by 1990 and of 25 per cent by 1995. So far as can be surmised, only preliminary steps are yet under way, and these targets, like others set in the past, will not be reached, and schools will continue to add substantially to the numbers of unemployed educated or literate youth.

IV

The New Education Policy, like the Seventh Five Year Plan itself, has altogether failed to take note of the critical problem of literate rural youth. The problem is referred to quite inadequately and even somewhat casually in the discussion in the Programme of Action on vocational training for the out-of-school population. The issue is a much deeper one. It lies at the centre of the problem of integration of educational development with strategies for economic and social development, not merely conceptually or in terms of the country as a whole, but region by region within each state, according to its specific conditions, resources and possibilities, and thereby for the entire country. Literate youth, both rural and urban, constitute both a vast resource and a vast challenge in the development of India. Primary attention has to be focussed on literate youth in the rural areas, comprising men and women in the age group above 15 and below 35 years of age, who possess some measure of literacy and education. They form an increasingly restless, discontented and explosive section of our rural population, whose contemporary significance can be scarcely missed. If developed systematically as a major national instrument for rural transformation, alongside full-scale manpower utilisation and the development of women, they are among the country's most precious resources of energy and vitality and preparation for the future.

The size of the problem and the opportunity—can be seen from the data assembled in the 5 per cent sample of the 1981 population, which provides breakdowns which are not otherwise available. Of the youth population of the country (15-35 years), numbering 214.5 million in 1981, representing 31.3 per cent of the total population, 156.7 million lived in rural areas and 57.7 million in urban areas. On the definitions adopted for the 1981 census, 222.5 million were returned as 'main' workers and 22.1 million as 'marginal' workers. Of the latter, 85 per cent were female workers, and 15 per cent male workers. Among main workers, in 1981, there were about 30 million literate young men and about 3 million literate young women in the age-group 15-35. Their distribution according to educational levels was as follows:

	Literate Young Men (%)	Literate Young Women (%)
Literate (without educational level)	20.3	29.8
Primary	37.5	44.6
Middle	23.4	15.8
Matriculation/ Secondary	14.7	8.2
Higher Secondary/ Intermediate/Pre-University	4.2	1.5
	100.00	100.00
Total Number (in thousands)	30,309	3,030
As proportion of main workers of all ages (%)	22%	7.7%

The Programme of Action under the new educational policy has treated the question of providing facilities for vocational training for students in secondary and higher secondary schools and for out of school youth as being primarily one of coordination and organisation. This is of course an important aspect, but there is a further dimension. Opportunities for employment do not arise by themselves in the ordinary course of development except to a marginal extent. They have to be stimulated and expanded through deliberate economic and social planning, specially at the regional level. The economy of every single region and district has to be transformed so as to provide within a given time perspective of ten to fifteen years an expanding combination of agriculture, industry and social services and other infrastructures. In other words, beyond a point, education and training of youth within and outside schools becomes a collective obligation of agencies concerned with education and training and the entire apparatus of planning and development, including public and private developmental agencies, at the national, state and district levels. This aspect itself called for greater emphasis both in the Seventh Plan and in the educational policy and is without question, a vital component of India's perspective planning.

V

The National Policy on Education-1986 is inexplicably weak and half-committed in relation to adult education. The Programme of Action acknowledges the size of the problem. Between 1951 and 1981, the absolute number of illiterate persons increased from 300 to 437 million, women comprise 57 per cent of the illiterate population, and the proportion of illiterate women among scheduled tribes (except in parts of the north-east) and among scheduled castes and other backward classes is very much larger, being often 90 per cent or more. The target now is to eliminate illiteracy among women in the 15-35 age group, numbering (in 1981) 100 million—among 40 million by 1990 and among 60 million by 1995.

The new programme has yet to get into action beyond maintaining activities already in progress. In the hope of launching Eradication of Illiteracy as a Technical and Societal Mission, a draft document under the title National Literacy Mission has been recently prepared, but this has yet to receive final approval. For the period 1987-1990, an outlay of Rs. 550 crores has been postulated, but how firmly even resources of this order have been assured or committed by the Finance Ministry and the Planning Commission is far from certain. A period exceeding 28 months since the issue of the **Challenge of Education** might have been utilised for drawing up a detailed programme of action, in co-operation with the States, covering every district in the country, with a focus on groups and areas which have greatly lagged behind even in comparison with a disturbingly low national average of literacy rates, particularly in rural areas and in the poorer urban localities, and even more among women, and scheduled tribes, scheduled castes and other backward classes, and among important minority groups. These tasks are expected to be taken in hand after the National Literacy Mission has been finally approved. In other words, in an area which represents, without doubt, the greatest single failure of national planning in India, as a nation we have still to get to work in any adequate sense in meeting the challenge of eadication of mass illiteracy.

(Continued on Page 55)

MANAGEMENT OF EDUCATION

The Case for an Indian Education Service

G. B. K. Hooja*

It is gratifying to note that the Ministry of Human Resource Development (MHRD) recognises the importance of an over-all system of planning and management of education with a view to:

(a) Evolving a long term planning and management perspective of education and its integration with the country's developmental and manpower needs;

(b) Decentralisation and the creation of a spirit of autonomy for educational institutions;

(c) Giving pre-eminence to people's involvement, including association of non-governmental agencies and voluntary effort;

(d) Inducting more women in the planning and management of education; and

(e) Establishing the principle of accountability in relation to given objectives and norms.

In order to achieve these objectives it is proposed to operate through the following agencies:

At the national level, the Central Advisory Board of Education (CABE) shall play a pivotal role in reviewing educational development, determining the changes required to improve the system, and monitoring implementation. It shall function through appropriate committees and other mechanisms created to ensure contact with and coordination among the various areas of human resource development.

Similarly, at the state level, the State Governments shall establish State Advisory Boards of Education on the lines of CABE. At the District level, District Boards of Education shall be created to manage education upto the higher secondary level.

At the local level, a major role has been assigned to the local committees and known Government and voluntary agencies.

It is noted that the main task is to strengthen the base of the pyramid, which might come close to a billion people at the turn of the century. Equally, it is felt important to ensure that those at the top of the pyramid are among the best in the world.

Happily, the MHRD also realises that appropriate management structure in education calls for the establishment of Indian Education Service (IES) as an All-India service. It is expected that this service will bring a national perspective to the vital sector of education. In the Programme of Action which has been formulated in pursuance of the National Policy on Education (1986) also, the role of Indian Education Service has been duly recognised and it is now proposed to hold detailed consultation with the States in order to determine the basic principles, functions and procedures for recruitment to this service, so that the States adequately appreciate the need and benefit of this structure, particularly in the context of attracting talented personnel and giving them a stature commensurate with their responsibilities. Detailed proposal inclusive of alternate career paths for the cadre, processes of selection and induction of existing manpower engaged in education, arrangements for mobility between the State and the Central Governments and the scope for lateral movement as well as mobility and secondment vis-a-vis the academic system are proposed to be worked out in consultation with the State Governments. While the necessity of holding consultations with the State Govts. cannot be overruled, care should be taken that this process of consultation with the State Governments is not inordinately delayed and the constitution of the Indian Education Service may not, in consequence, remain a pious hope and a dead letter.

In this context, it may be noted here that there was an Indian Education Service to guide and control the Indian Educational System from 1864 to 1924. Young, devoted, bright scholars were selected at a young age from the universities of Cambridge and Oxford and sent out to India to serve as Directors of Public Instruction and various educational institutions of higher learning. With the introduction of dyarchy, following the Montague Chelmsford reforms in 1921, education become a transferred subject and, therefore, the inflow of British, entrants into this service ceased and the service was eventually abolished in 1924. However, most of the old guard continued work for the rest of the duration of their terms particularly so the Indian members and they gave a tone to the educational system.

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As observed by Prof I.A. Gilbert during the course of researches on the Organization of the Academic Profession in India (Susanne and Lloyd Rudolph: *Education and Politics in India*), the members of the Indian Education service taught in the colleges, not in universities. Each provincial Government maintained a modern college attached to the local university. It served as the premier college with a two-fold purpose: First, it set the teaching and training standards of the universities, acting as a model for the other affiliating colleges; and Second, it functioned as an elite college admitting the best students in the province, giving them the best training possible and preparing them for eventual responsibility in the Government services. Thus the role of Education Service in British India was to set standards in higher education and to create a modern professional elite intellectually prepared to man the modern professions and to assume the highest positions available to Indians then. As is known, this service amply fulfilled this purpose.

In the beginning, like the other superior Imperial services, the composition of the Education service was entirely European and all the senior posts in the departments were reserved to its members. The Indians were recruited to the PES. They were selected often on the advice of the Directors of Public Instruction and principals of Government colleges. Amongst them may be counted such eminent scholars as Dr P.C. Ray and Prof J.N. Sarkar. However, the National movement gained momentum, the elite in India sought more political freedom and began to demand membership in the Imperial services. Therefore, when the Commission for Public Services met in 1914 Indian witnesses presented an irrefutable case for the induction of Indian scholars into the IES. It was pointed out that many Indians had taken better European degrees than the British recruits and also that Indian Professors could communicate more effectively with the students than men of British origin could. As a result of the recommendations of the Commission recruitment to the IES was thrown open to Indian personnel.

In the smaller world of the Government colleges, the organisation of the educational service was undoubtedly a success. It brought to India men whose training and ideas converged with the limited ends of Indian college education: to train a class of Indians qualified to fill posts in the administration, courts and colleges, as civil servants, magistrates and professors. For the most part, government college graduates filled such posts as their professors would have wished, with due probity and professional competence. Moreover, in the microcosm of the college, the dedication of the Indian members of the Service to teaching often surpassed their European counterparts. In the graded service in the provincial cadres and later as equals in the IES, Indian teachers earned international merit. It is however, noteworthy that status difference created by different service conditions and the daily manifestation of those differences in separate common rooms, private rooms for IES men, and annual dinners for superior service officers often generated irritants, which sometimes erupted with articulate and noticeable protests.

The recent Teacher's Strike has established, if nothing else, a good case for the reconstitution of the Indian Education Service. One of the teachers' demands was to equate the grades and service conditions of the teachers with the IAS. While it may be a distant dream for 2.3 lakhs university teachers to receive the status and emoluments equivalent to the IAS, it is within the range of feasibility and eminently desirable to accord this status to say about 4000 academicians, roughly equal to the strength of the IAS cadre.

Now that the Government of India has undertaken the task of renovating the educational system keeping in view the new demands of modernisation and restoration of humanising values, it is of the utmost importance to give consideration to the building up of an effective agency for carrying out the task.

It has been well said that the last weapon in any war is the man behind the machine. That is why in the armed forces a great deal of attention and resources are expanded on the selection/training of officers and men. The candidates for the officer cadres particularly are subjected to a critical scrutiny of their aptitude and potential before they are selected and sent out for hard training and a probationary spell. It is just as it should be as only then officers can be trusted to lead their men to defend the frontiers of the country, whether in the Himalayan snows, Rajasthan Desert, Assam Jungles, the deep seas, or the blue skies.

Similar care in selection and training of the teaching cadres is also called for, if commensurate results are expected. In this context, the reconstitution of the Indian Education Service should play an effective role. By selecting young scholars through a competitive examination held by the UPSC, the service would attract the cream of the university graduates, even as the IAS does. In fact, the combined examination now being held for the IAS/IFS could be thrown open for selection for the IES too, in which case candidates may be given an option to offer their choice. The service conditions should be similar. Needless to say that the candidates so recruited will be achievers imbued with the urge for excellence and shall continue to exert themselves to acquire excellence in the various posts entrusted to them during their long career ahead. They will also have an all India outlook and, being connected with their counterparts of the IAS by college ties, they could put forward the needs of the educational system before the much maligned bureaucrats with ease and at peer level. The new education programme envisages the establishment of Navodaya Schools in the country. These and the higher secondary schools/colleges first degree colleges could be headed by the members of the Indian Education Service. The rapid introduction of modern electronic and technological aids in the educational system calls for new curricula and pedagogic strategies. The learning/teaching processes in our schools and colleges have to be radically transformed to meet new demands. A properly recruited and trained cadre is, therefore, required to develop the infrastructure, curricula, resources and community involvement in the educational sector.

In the circumstances, the MHRD would be well-advised to straightaway place a demand for say 200 candidates to be selected for the IES through the combined IAS/IFS examination to be held by the UPSC next year. Surely, in order to discharge the vast responsibility imposed on it by the New Education Policy, (NEP), it would require an IES cadre of the strength of 3,000 to 4,000, and a beginning could be made with 200 recruits at the next combined IAS/IFS examination. Besides, schemes for special selection could also be undertaken. The first batch of direct recruits shall have to undergo pedagogic and administrative training, so that it shall not be in a position to assume responsibility before 1989 or 1990. The Union Government has a network of educational institutions including those in the Union Territories. Besides, there would be new schools and institutions to be established under the NEP. In the meantime, some States may fall into the orbit and ask for IES Officers to be seconded to them. Even if some States hesitate to welcome the IES for fear of losing their hold on the State educational apparatus, there shall be enough demand to absorb the recruits thus selected. At any rate, the Union Government should not fall a victim to prolonged consultations with the States and thus delay the constitution of this very useful agency, which shall form the nucleus of the delivery system of the NEP. An added advantage that shall accrue from this proposal is that it may eliminate the necessity of holding a separate National Test for recruitment to the educational cadres of the universities/colleges as desired by the UGC, and which is at present being stoutly opposed by the bulk of teachers. The preliminary examination being held for selection for the IAS/IFS could take care of this. Those who pass this test and are considered eligible for the final test for the IAS/IFS may be considered eligible for teaching jobs in the university system. Apart from reducing the scope for nepotism and *sifarish*, this will work towards the development of an atmosphere of excellence and concentrated application. Those who refuse to avail of this opportunity shall have no cause for grievance and agitation, and may as well seek avenues other than careers in the educational system. So much for the good of our children.

Connected with the question of management of education is the process of removal of grievances. It is of utmost importance that human grievances, legitimate or otherwise, should be redressed without undue delay, otherwise the functioning of the system gets blocked. Since the educational system employs and serves highly educated and sensitive persons, who are conscious of their strength, they are often obliged to go to courts, having failed to secure redressal at the departmental level. Sometimes, they resort to joint direct action, and educational institutions, particularly universities and colleges, are, in consequence found closed disrupting the teaching/learning schedule. The Law Commission has recently sponsored a proposal to set up a Central Educational Tribunal to deal with the causes, controversies and disputes involving universities, teachers in universities and affiliated colleges and students, non-teaching staff and Governments concerned, so that delays in disposing of disputes involving the aforesaid parties may be reduced and an All-India perspective to educational problems may emerge. The Law Commission proposal seeks to abolish the jurisdiction of High Courts, and decentralise administration of justice in this field, in the hope that it shall not only result in expeditious disposal of disputes, but the area of conflict between the universities and the Government in the matter of appointment of Vice-Chancellors, affiliation of colleges, internal autonomy and financial autonomy shall also be reduced. This would, at the same time put a brake on the corrupt practices which have reduced the credibility of the examination system and have disturbed the atmosphere necessary for the pursuit of excellence. Above all, it shall restore the dignity of the Vice-Chancellors and university dons, who are now harassed to no end by being summoned to attend subordinate courts on flimsy applications by unscrupulous self-seekers. □

Resources for Higher Education

Problems & Prospects

J. L. Azad*

The National Policy on Education (NPE) has underlined the importance of higher education as a crucial factor for survival because of its potentiality to contribute to "national development, through dissemination of specialised knowledge and skills,"[1] The NPE has, therefore, laid stress on, among other things, consolidation of, and expansion of facilities in, the existing institutions. The NPE has also emphasised the importance of promoting research "as a means of renovation and renewal of educational process."[2] Another important recommendation made by the NPE relates to the reorganisation of technical and management education "taking into account the anticipated scenario by the turn of the century, with specific reference to the likely changes in the economy, social environment, production and management processes, the rapid expansion of knowledge and the great advances in science and technology."[3]

The NPE has not indicated the financial needs of the different sectors of education with a view to fulfilling various targets laid down in the policy document. It has, however, been stated that "egalitarian goals and the practical development oriented objectives of Indian society can be realised only by making investment in education of an order commensurate with the nature and dimensions of the task."[4] It has also been stated that "while the actual requirements will be computed from time to time on the basis of monitoring and review, the outlay on education will be stepped upto the extent essential for policy implementation in the Seventh Plan. It will be ensured that from the Eighth Five Year Plan onwards, it will uniformly exceed 6 per cent of the national income."[5]

These are, at best, expectations about the likely emergence of a future financial scenario, which may or may not materialise. It is, therefore, necessary to make some estimates of the future requirements of higher education as also to discuss the sources of financing of higher education during the next decade or so. Before doing that, however, it would be pertinent to analyse the present policies and procedures of financing of higher education in India.

This paper has been divided into two sections. In Section I, an analysis of the magnitudes of finance for higher education, the sources of funding and the problems arising therefrom have been analysed. In Section II, rough estimates of the financial requirements of higher education during the next decade have been indicated. Some policy issues emerging therefrom have also been discussed.

Section I

Overall Magnitudes

There has been substantial increase in the overall expenditure on education as well as on higher education since 1947, when India shook off the shackles of colonial domination. From a mere Rs. 55 crores in 1947-48, the expenditure on education has increased to over Rs. 8,000 crores. In terms of proportion to the G.N.P., the increase has been from about one percent to about four percent. It has also been noticed that during the period 1970-85, while the G.N.P. increased by about five times, the increase in educational expenditure was around seven times. Thus the increase in the educational expenditure outstripped the increase in G.N.P.

The expenditure on higher education also registered considerable increase : from a modest sum of Rs. 8 crores in 1947-48, it has gone up to about Rs. 900 crores in 1984-85. As a proportion of the national income, the percentage increased from 0.2 to 0.5 during the corresponding period.

The expenditure on R & D has also registered significant increase. From a meagre amount of about Rs. 5 crores in 1950-51, it increased to Rs. 1430 crores in 1983-84.

There has also been a sizeable increase in the developmental expenditure on education and higher education during the successive five year plans. From a modest sum of Rs. 153 crores in the First Plan, the plan expenditure on education increased to Rs. 6883

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crores in the Seventh Plan. So far as higher education is concerned, the expenditure increased from Rs. 34 crores in the First Plan to Rs. 764 crores in the Sixth Plan. For unexplained reasons, the allocations made for higher education in the Seventh Plan have not been specified. This would mean that the quantum of developmental outlays for higher education would primarily depend upon the availability of resources and the degree of deftness, with which the case for higher education is placed before the decision making authorities.

A Word of Caution

It would be apparent from the preceding analysis that the amounts allocated for education—both for maintenance and development—are quite substantial for a country like India, where a little less than half of the population lives below the poverty line. It would, however, be necessary to sound a word of caution lest the impressive record of 'quantitative progress' should introduce a sense of complacency. It would be necessary to mention the following areas of disquietude, particularly in the case of financing of higher education.

(i) Inadequacy of Expenditure

The National Policy on Education has referred to the seriousness of the "deleterious consequences of non-investment or inadequate investment in education."[6] In a study of university finances over time conducted by the present author, it was revealed that 38 per cent of the universities had consistently deficit budgets.[7] It means that two out of five universities had to face the problem of inadequacy of resources. The position of colleges, almost 50 per cent of which are academically non-viable and, therefore, not eligible for U.G.C.'s assistance, is far worse.

(ii) Impact of Inflation

It has been reckoned that because of the spiralling inflation, the real per student expenditure, at the higher education stage has gone down, not withstanding the substantial increase in the quantum of apparent inputs in higher education.[8] This means that the actual size of the goods and services available for the development of higher education has been reduced as compared to those available twenty years back.

(iii) Rising Expenditure on Staff Salaries

It has been noted that the proportionate expenditure on staff salaries has been rising over the years. In 1950-51, the proportion of expenditure on staff salaries was about 44 per cent of the total expenditure on higher education. In 1980-81, the corresponding percentage has gone up to about 73. This means that the expansion of the academic infrastructure is not commensurate with the rising needs of higher education. The impact of this desparate growth of the expenditure on academic staff and the other educational apparatus on the quality of education can be easily surmised.

(iv) Declining Developmental Expenditure

In view of the competing claims from other sectors of education, like elementary and adult education, higher education has to be content with a dwindling proportion of plan funds. From a lowly 22 per cent of the total allocations for education in the First Plan, higher education reached the zenith in the Fourth Plan, accounting for 38 per cent of the plan allocations. Thereafter, it has consistently declined reaching a percentage of 30 in the Sixth Plan. The Seventh Plan does not mention any separate allocation for higher education. It is unlikely that, with the NPE laying emphasis on school education and adult and non-formal education, higher education will be able to muster adequate resources during the eighth and the successive plans.

The preceding analysis has shown that there are quite a few incongruities in the financing of higher education. Inspite of the apparent escalation in the amount of expenditure, the real increase has not been very significant. Further, while both the universities and colleges are faced with the problem of inadequacy of financial inputs, the colleges are the worst affected. It has also been noticed that there has been a perceptible decline in the developmental outlays allocated for higher education under the successive five year plans. It may also be stated that given the present socio-political scenario, higher education is unlikely to attain a position of pre-eminence in the allocation of resources as it enjoyed upto the end of the Fourth Five Year Plan.

Section II

Resource Needs of Higher Education

The preceding analysis brings into sharp focus the somewhat discouraging position of university finances. It would be rather unrealistic to assume that there will be significant improvement in the allocation of resources for higher education in the immediate future. This factor will have to be kept in view while forecasting the resource needs of higher education during the next decade or so.

There are other imponderables also, which militate against making precise estimations, of financial requirements for higher education. These include the absence of realistic estimates about the socio-economic development of the various regions of the country and the size of the professional and technical manpower required for the various development projects, the magnitude of allocable resources for education and the *inter-se* priorities within the field of education etc.

Inspite of these limitations, it may be pertinent to hazard a guess about the likely requirements of higher education in the next decade or so. It may be mentioned that the fast changing socio-economic situation and the emerging stress on scientific and technological development would necessitate emphasising scientific and technological education. The NPE has also laid stress on consolidation of, and expansion of facilities in the existing institutions. Research in the universities has been promised enhanced support.

All these programmes would require substantial financial inputs in education as also higher education. As already stated, however, it is difficult to make a reliable estimate of the required outlays to achieve the objectives outlined in the NPE.

In the absence of any scientifically valid information about the broad physical targets and the unit costs of achieving those targets, we could make rough estimates of the costs of education and higher education, keeping in view certain oveall parameters mentioned in the NPE. This is attempted below :

The NPE has suggested that while the actual requirements for different programmes of educational development will be "computed from time to time on the basis of monitoring and review, the outlay for education will be stepped up to the extent essential for policy implementation in the Seventh Plan. It will be ensured that from the eighth plan onwards, it will uniformly exceed 6 percent of the National Income."

Assuming that the target of expending 6 per cent of the national income on education is fairly realistic, we could work out the estimates of expenditure on education and higher education as follows :

Year	G.D.P. at factor costs	Expenditure on Education	Higher Education
		(Rupees in Crores)	
1984-85	193,428	7,500	885
1989-90	246,881	14,813	1,748
1999-2000	402,143	24,129	2,847

Source : Estimates of G.D.P. (Gross Domestic Output) at factor costs have been taken from the Seventh Five Year Plan 1985-90, Vol. I, p. 14.

It may be noted that these estimates are based on current prices. The cost would escalate considerably in case the spiralling inflation, that has become an inalienable part of the Indian economic situation, is taken into account.

Sources of Income

It would be noted that in order to achieve the broad targets laid down in the NPE, the country would need to increase its investment in education from Rs. 7,500 crores in 1984-85 to Rs. 24,129 crores by the turn of the century. The corresponding figures for higher education are Rs. 885 crores and Rs. 2,847 crores.[9] This would mean a perceptible increase in the expenditure on education and higher education. To provide for the investment of this magnitude, it would be necessary to step up the budgetary allotments for education both by the Central and the State Governments. Further, it would be necessary to seek larger contribution from the general public.

To achieve this, the following suggestions are offered:

(a) **Raising Student Fees**

The present fee structure at the university stage is, to say the least, a regressive form of taxation. It gives an utterly unearned subsidy to all, regardless of their capacity to pay, or their capability to profit by higher education. The NPE has suggested raising fees at the higher levels of education. The question, however, necessitates deeper examination in view of its socio-political and academic ramifications.

It is felt that, in the present situation in India, it may be difficult to suggest an across the board upwar revision of fees. It would, perhaps, be more prudent to introduce what may be called a differential system of fees under which the meritorious, but economically weaker students, should pay fees at a much reduced rate. Conversely, the academically incapable students should pay fees almost on the cost of services principle. The former category of students should also be given liberal scholarships and freeships so that lack of finance should not be a limiting factor on their quest for academic advancement.

(b) Harnessing Community Support

There has been a perceptible decline in the community support for higher education. It is not necessary to go into the causation of this phenomenon. The fact, however, remains, that the general public is not coming forward to contribute for higher education.

It is, therefore, necessary that the educational institutions should make efforts to persuade the community to provide funds for the education of their own children. This could be done by making the community aware of the needs of the university institutions. So long as the universities and colleges remain in a state of academic isolation, not much by way of community suppprt is likely to be achieved. The success of school improvement conferences, in which the local communities had been persuaded to make sizeable contribution for the improvement of schools in Tamil Nadu, Maharashtra and some other states, is an eloquent testimony to the success of similar ventures in the case of university institutions.

The NPE has also made some important suggestions about raising resources. These are :

"Resources to the extent possible, will be raised by mobilising donations, asking the beneficiary communities to maintain school buildings and supplies of some consumables, raising fees at the higher levels of education and effecting some savings by efficient use of facilities. Institutions invoved with research and development of technical and scientific manpower should also mobilise some funds by levying a cess or charge on the user agencies, including government departments and entrepreneurs. All these measures will be taken not only to reduce the burden on state resources but also for creating a greater sense of responsibility within the educational system......"[10]

We shall conclude the discussion by emphasising that no amount of additional resources mobilisation would make a dent on the system of higher education unless certain basic structural changes are brought about. The most important among them is the need to regulate the unending flow of students to institutions of higher education regardless of their capacity to profit by it. As a corollary to this, the ever-increasing proliferation of institutions of higher education will need to be contained. Another essential pre-requisite is to expend technical and professional education strictly in relation to the assessed manpower requirements on a long term basis.

Lastly, equal emphasis has to be laid on the introduction of non-monetary inputs like restructuring and modernisation of curriculum, introducing better methods of teaching; improving procedures of evaluation etc. Mere reliance on monetary inputs, whose availability is strictly limited, would not enable us to meet the emerging situations adequately. ☐

References

1. National Policy on Education, 1986, p. 14
2. *Ibid.* p. 18.
3. *Ibid.* p. 16-17.
4. *Ibid.* p. 28.
5. *Ibid.* p. 29.
6. National Policy on Education, *op. cit.* p. 28.
7. Azad J.L., Government Support for Higher Education and Research, Delhi, Concept Publishing Company, 1985, p. 12.
8. For details, *See* Azad, J.L. Government Support for Higher Education and Research, *op. cit.* p. 14.
9. The figure for higher education has been computed on the assumption that the ratio between the expenditure on education and higher education during the period 1985-2000 will remain at the level of the ratio in 1984-85.
10. National Policy on Education, *op. cit.* p. 28.

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(a) Imparting education in Agriculture and allied subjects.

(b) For the advancement of learning and research work in Agriculture and allied subjects.

(c) For undertaking extension education programme for Rural people of the State of Rajasthan.

(d) For such other activities or projects as the University may deem proper in order to achieve the objects of which it has been established.

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Code of Professional Ethics for Teachers

K. Jagjit Singh*

The need for a Code of Conduct for Teachers has been stressed both by the UNESCO and International Labour Organisation (ILO) since such code ensures the prestige of the profession and highlights professional duties in accordance with agreed principles.

The National Policy on Education which has been approved by our Parliament in May, 1986 also requires that national level associations of teachers should prepare a code of Professional Ethics for teachers, and seek its observance. Universities in India could indeed play vital role in the implementation of the New Educational Policy and preparation of Professional Ethics. But the fact remains that the New Educational Policy has been formulated without much participation of the college and university teachers. In all, only four one-day workshops were held in different parts of the country where selected educationists were invited to express their views on the draft prepared by the policy makers. This document is quite eloquent on the status of teachers, their service, their recruitment and professional responsibilities.

So far as the code of Professional Ethics and finding out the means to ensure its observance are concerned, various attempts are now being made to prepare such a code. This has become contentious and is being opposed by the teachers' unions.

One must not forget that these days every profession has its own Professional Ethics consisting of rules to be followed by the practitioners of the profession. Teaching too has become a highly specialised profession and it is felt that teachers must set such examples which would command the respect of the students, the parents, colleagues and society at large. We must not forget the basic fact that in every developing country teaching community plays the role of active agent of socio-economic change. Teaching is a form of public service which requires expert knowledge and specialised skills, acquired and maintained through vigorous and continuing study. It also calls for not only a sense of personal but corporate responaibility for the education and welfare of the students. It is imperative that those who choose teaching as a career must assume the obligation to conduct themselves in accordance with the highest standards of the teaching profession. They must aim at quality and excellence in their work and conduct. Teaching involves not merely imparting of instructions but also influencing and motivating those who are taught. A teacher acts not merely as communicator of knowledge but he also enables students to grow to their fullest stature and develop suitable attitudes. Naturally, this responsible task can be performed successfully only if the teachers act as models and set personal examples.

In ancient Indian society a teacher was treated as the legendary *Guru*. There was no challenge to his monopoly of scholarship. With the adverse conditions prevailing during the middle ages, there was decline in his scholarship and his position was shaken. Lip sympathy replaced high regard and gradually teaching has become secular and practical.

Presently, the explosion of knowledge has produced its own impact and as such the teachers have to aequire knowledge and get training in precise skills and scientific methods if they have to do full justice to their task. This objective can be achieved only if the teaching community sets its own standards and also formulates its own Professional Ethics.

Objectives

In our country it is now strongly felt that education should be directed to all-round development of human personality and the creative and productive abilities of all citizens for the intellectual, social, political, economic, scientific, moral and spiritual advancement of the country. We must recognize that every child in free India has the Fundamental Right to be provided with the fullest possible and equal educational opportunities based on social justice, without discrimination on grounds of religion, caste, creed, region, sex, political opinion or economic condition. This can be possible only if the government provides sufficient financial assistance for providing the necessary infrastructure, equipment, adequate and qualified staff and all facilities and amenities conducive to imparting education, in an atmosphere of freedom and creativity. Furthermore, the teachers must also be sincere-

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ly committed to achieve these objectives and aim at self-direction and self discipline and honestly get prepared to adopt a Code of Professional Ethics and agree to enforce it voluntarily.

Contents of Professional Ethics

Recently, National Council of Educational Research and Training (NCERT) has formulated a draft of Professional Ethics, which was worked out in a workshop held in November, 1986 at Hyderabad. The objectives of framing Professional Ethics as outlined by this workshop, are to uphold professional integrity, enhancing the dignity of the teacher, and curbing of the professional misconduct.

It may be pointed out that according to the Concise Oxford Dictionary the word '*ethics*' means science of morals *or* moral principles *or* rules of conduct. Since ethics deal with moral questions and morals are usually adhered to and followed by one's own inner conscience, they cannot be treated as obligatory or binding.

In the light of this definition of ethics, let us critically examine and analyse the main points covered by the draft of the Professional Ethics prepared by the NCERT.

Teachers and Students

As regards the teacher-students relationship this draft points out that all teachers should treat their students with love and affection. They must also be just and impartial to all students irrespective of their caste, creed, sex, states, religion, languages and place of birth. Teachers must help their students in their intellectual, physical, social, emotional and moral development and character formation. Teachers must also generate scientific temper and a spirit of enquiry, creative self-expression and aesthetic sense among the students and encorage them to question and satisfy their curiosity. They should also cultivate in the minds of students respect for manual work and the workers. Teachers should also enable the students to appreciate our rich cultural heritage and unity in its diversity. They should inculcate a sense of love for the motherland and universal brotherhood and a spirit of tolerance and cooperation among students.

Teachers should also never accept additional remuneration for coaching or tutoring their own students. Teachers must be mindful of the individual needs and differences of students and their socio-cultural background. Teachers must also set a standard of dress, speech and behaviour worthy of example to the students.

Out of the above mentioned ethic of developing respect for manual work, non-acceptance of additional remuneration for coaching or tutoring and setting a standard of behaviour are indeed very difficult to implement. As regards coaching classes, it is, indeed, a very sad commentary on present system of education that majority of institutions have failed to generate challenging atmosphere in which the teachers and students are inspired to get totally involved in teaching-learning process. Instead of learning exclusively in the colleges and the universities, majority of the students join coaching classes believing it to be a passport to get good results. These coaching classes which teach science and commerce subjects, in fact, constitute parallel academic yet purely commercial organisational set up, teaching the same courses. They charge high fees and also pay amounts four to five time normal salaries of the teachers in the colleges. Since, these are underhand payments, no tax is deducted. Hence every teacher is tempted or lured to make substantial financial gains. In course of time teachers teaching in coaching classes, become addicted to commercial outlook and they never serve the mother institution with the same devotion with which they serve the coaching classes. They consider their regular salaries from the colleges and universities only as their pocket money and income from the coaching classes as their real income. An ordinary lecturer teaching in coaching classes enjoys all luxuries of life such as coloured T.V., V.C.R., latest model of car, air conditioned apartment, fully paid foreign trips etc., whereas some heads of departments and even Principals of colleges and the Vice-Chancellors who are assigned the heavy responsibility of running the 'Show' can hardly afford all these luxuries, if they decide to live within their own limited income.

Teachers and Society

As regards Society-Teachers relationship, this draft recommends that teachers must strive to develop the educational institution as a centre of human resource development providing knowledge and information needed for the area. They must also strive to fight fissiparous tendencies based on religion, region and language and separatist tendencies and extra territoral loyalties.

But this task is nearly impossible to accomplish because the political parties both in power and opposition are the root cause of promoting such tendencies. In fact the greatest danger to the politician is always from the intellectuals. Therefore, they always expect the teachers to refrain from participating in local, regional or national politics.

It is also expected of teachers, to take particular interest in promoting education of girls, the weaker sections and in creating an awareness of equality of women with men.

Teachers and Colleagues

According to this code, teachers in relation to their colleagues in the profession must seek and participate in programme of continual professional growth like in-service education, seminars, symposia, workshops, conferences etc. Secondly, they must keep abreast with the latest developments and techniques in subject matter and pedagogy. Thirdly, they should get involved in conducting experiments and innovation in teaching-learning practices. Fourthly, since generally some teachers are by nature jealous of the achievements of their colleagues, they should refrain from making derogatory statements about their colleagues in the presence of pupils, and other teachers and officials. And finally, they should also help in the corporate responsibility of protecting the image of the educational institution and the system as a whole.

Of course these objectives of the code can be achieved only when the teachers are involved at the grassroot level in the formulation of the educational system.

Teachers and Management

With regard to the Teacher-Management relationship, the draft code states that all teachers must cooperate with the head of the institution, the management and the educational administration in running the institution according to the stipulated norms. They must show due respect to constituted authority. They must be punctual and regular in attending the institution and in carrying out their duties and assignments. They must resist pressure from management and administrators in the matter of admissions and promotion to students. They must not shirk their responsibility and accountability to the students, the institution and the community as a whole.

Teachers and Parents

As regards the rules of conduct dealing with Parent-Teacher relationship, it is felt that teachers should establish friendly and cooperative relations with the parents and guardians. They must not do anything which tends to undermine the students' confidence in their parents or guardians. The teachers should also involve parents in various academic improvement programmes.

Natural question that arises from these provisions is that they are unilateral. They bind the teachers but they do not bind the parents.

Institutional Heads

The code also stresses imperative need of providing special code for every head of the institution because it is often seen that many institutions go to dogs because of the wrong persons at the helm of affairs.

The head of every institution must ensure the participation of teachers and share decisions with them in matters that affect them and the institution. He should advise the teacher immediately about the nature and source of any criticism regarding his professional or personal conduct. He should also ensure that the supervision and evaluation practices are subject to review by his colleagues. He should oppose arbitrary transfers and terminations and should also be impartial to his colleagues and follow accepted procedures while making assessment of the performance of his colleagues.

Code for Management and Government

In the Indian conditions where the teachers are harassed, humiliated and exploited by some unscrupulous managements and are made scapegoats for all the ills in the education system, any code of ethics for teachers will be unrealistic and, therefore, unworkable without corresponding obligations on the part of the managements and administrative departments of the Government. Therefore, it is essential that similar codes of ethics must also be formulated and adopted by the Union and State Governments and managements of the educational institutions.

State and Union Governments

The draft code states that it is important that in consultation with teacher organisations, the government and management must maintain, a teacher-pupil ratio which will enable the teacher to teach effectively with individual attention. The government and management must provide the teacher adequate salary, uniform pay structure, a decent standard of living, social security, retirement benefits, housing and uniform service and working conditions required to discharge his duties without want and without fear or favour. The government and management must promote a system of teacher evaluation, participative and data based, rewarding merit and discouraging substandard performance.

Professional Organisations

It is also pointed out that all teachers should be members of professional organisations. They should recognise services to the professional organisations as a professional responsibility and should be responsive to the call of such organisations and observe their code of behaviour and discipline.

The management and the educational administrators should be just, fair, impartial and honest in matters like recruitment and promotion and assignment of duties to teachers. They must avoid favouritism, nepotism and political interference in the matter of recruitment, promotions and transfers of teachers. They must disallow external interference in admission and promotion of students. They must also provide the necessary infrastructure and other conditions necessary for the running of the institution in an atmosphere of freedom and innovation.

Of course, these provisions of the code can be observed only if the managements have two things, namely autonomy ond sufficient resources. Unfortunately, both these conditions are not applicable to the Indian educational system because of the tight control excercised by the government on all educational institutions.

Let us not forget that gone are the days when the college and university teachers could have welcomed and voluntarily framed Professional Ethics. Today even if such codes are framed, they can be challenged in the courts of law. Under the blanket cover provided by the Indian Constitution which grants Fundamental Rights and has provisions for filing writ petitions, and also under the cover of natural justice, every action taken by the executive authorities of both universities and colleges is being challenged and ultimately it is left to the law courts to decide issues. It is a well known fact that presently thousands of such cases are pending in courts against almost all universities and colleges. Legal battles, involving the authorities on the one hand and teachers on the other, are indeed, increasingly corrupting and polluting the academic atmosphere.

To a layman, observance of Professional Ethics by the teachers may seem as easy as observance of the traffic rules by the persons driving their vehicles on the road. Yet the two can hardly be compared. Teachers are not like journalists, lawyers, medical practitioners, chartered accountants or architects who become members of the professional bodies and mostly practice independently. Teachers do belong to a highly specialised profession yet they do not practice their profession independently. They have to join colleges and universities and as such they become not only members of such institutions but also their employees. Since these institutions have themselves lost respectability and lack real participative and corporate character, the teachers also stand discredited, frustrated and dejected and they are in no mood to accept any restraint or control more than what it has been there in the past. Majority of the teachers today abhor the concept of accountability, evaluation or assessment. As the saying goes "King can do no wrong", the teachers too work on the assumption that they too can do no wrong.

Teaching may be specialised profession but teachers can never be independent because they are all employed by the executive authorities of universities and the management of colleges. Legally teachers and their employers have only contractual relationship. If the teachers are solely taking legal view of the duties, it is mainly due to the fact that the politicians and high officials of the government have now become self-appointed custodians of the moral values of our society, and they do not hesitate even to under-play the importance of the role of the teachers which indeed undermines their self-respect and dignity. Consequently the teachers feel that more than the teachers, it is the vested interests in society which feel the need of formulating Professional Ethics for them. Let us not forget that one good teacher is worth a thousands of priests. The influence which teachers exercise directly or indirectly on the minds of the students, is indeed, infinite. Teachers can sow the seeds of revolution and release flood gates of unending energy lying dormant in the youth. The youth who look to the teachers for sense of direction are apostles of the new future. None can know the secret of the power hidden in the youthful hearts nor the magic influences exercised by the voice of youth on the masses. Since teachers hold the master key to th hearts of the youth, the real threat or danger to an established order comes from the teachers.

It may be pointed that any code of Professiona Ethics suggested by the NCERT or Association o

Indian Universities will never be appreciated by the teacher. If the makers of educational policies really mean business they should throw the ball in the court of the teachers' organisations. Let each college and each university and each teachers' union prepare its own draft of the Professional Ethics after debating each proposed provision and let them also suggest themselves the mechanism of its observance. Unless this is done, teachers are likely to feel that something is being done behind their back with the ulterior motive of taking them for a ride and to undermine their sense of security of service.

If in all developing countries teachers play the role of agents of social and economic change, the Indian teachers feel that they no longer enjoy any position of respect and the society at large and the Government in particular are least concerned to improve their lot. Recent All India strike by the teachers has raised many issues and in the post-strike period the teachers have been very much disillusioned. After the strike has been called off, majority of the teachers are disheartened and they are no longer committed to do their work with the same zeal and transparent sincerity as they were doing before the commencement of the strike.

None can deny the desirability and feasibility of the formulation of code of Professional Ethics. However, there should be general agreement on the basic elements of such a code and its enforcement. Yet the teachers are opposing formulation of any code of Professional conduct. Why ? Because they know it well that the colleges and universities have lost their autonomy and as such the contents of the code are the brain children of non-educationists and adoption of any such code would mean to be at the mercy of the bureaucrats who can never understand the psyche of the teaching community.

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Academic Staff Orientation Programme —A Model

Mathew George*

Introduction

The University Grants Commission (UGC), has decided recently to establish a number of Academic Staff Colleges (ASCs) throughout the country, at least one in each state from the academic year 1987-88. The ASCs are expected to organise orientation programmes to the newly recruited lecturers in colleges and universities in the catchment area. As it is a novel scheme, at present there is no known model of an Academic Staff Orientation Programme (ASOP). Therefore it is necessary to cogitate and evolve a model that is flexible and most suited to the conditions in the region. An attempt has been made in this paper to discuss a working model of an ASOP, to help the organisers of ASCs to give shape, adapt or modify their programmes to the conditions in their locality or region.

What is a Model ?

A model is a simplified description of a complex phenomenon. An abstract idea becomes more or less concrete through a model. It is to a certain extent a blue print, a design, a plan or a working model. Assumptions are the raw materials for building up a model. When assumptions undergo change, model also has a undergo modification. We have to bear in mind that a model is after all a model and an approximation to reality. It is bound to be a bit unrealistic and arbitrary especially in a dynamic society. One model may generate thinking to evolve modified forms of the original to suit the situations and society in which ASC is located. A good model is the outcome of spending considerable time, thought and energy. It is a prerequisite for optimising the effective utilization of the scarce educational resources for introducing this innovation for the new entrants of teachers in colleges and universities.

Objectives

The objectives of the Academic Staff Orientation Course (ASOC) are to enable the newly appointed lecturer to :

(a) understand the significance of education in general and higher education in particular, in the global and Indian contexts;

(b) understand the linkages between education and economic and socio-cultural development with particular reference to the Indian polity where secularism and egalitarianism are the basic tenets of society;

(c) understand the role of college/university teacher in the national goal of achieving a secular and egalitarian society;

(d) acquire and improve basic skills of teaching at the college/university level;

(e) be aware of the developments in his specific subjects;

(f) understand the organization and management of a college/university and to perceive the role of a teacher in the total system; and

(g) utilize opportunities for development of personality, initiative and creativity.

Components

In order to achieve the above objectives, the curriculum for thc ASOC may have the following four components:

(i) **Component A**: Awareness of linkages between Society, Environment, Development and Education.

(ii) **Component B:** Philosophy of Education, Indian Education, Indian Education System, and Pedagogy.

(iii) **Component C**: Subject upgradation.

(iv) **Component D**: Management and Personality Development.

Assumptions

(1) The number of participants drawn from two or more universities and their affiliated colleges with heterogeneous background will be 40-50.

(2) The parent institution should not be deprived of the services of the participating lecturer for not more than three weeks at a time.

(3) The ASOC will be for a period of 6-8 weeks. It is flexible with regard to time, modules and sessions to achieve the objectives within a period of 12-18 months.

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(4) An average of five working days per week is calculated and approximate number of working days for the entire ASOP will be forty. Every working day will have four sessions with two tea breaks and lunch break.

(5) Each session will have an interacting time of one hour followed by 7-8 minutes feedback in writing by participants, resource persons and members of advisory committee.

(6) If there are six working days in a week, Saturday will be used for fieldwork, socio-economic survey, symposium, assignments and library work.

(7) The ASOC will necessarily be full-time and residential.

(8) The members of the core staff of ASC will be highly qualified, trained and experienced teacher-educators with good background of pre-service and in-service teacher training and in implementing innovations in instructional technology.

(9) Only one good classroom with all modern equipments of educational technology is available for participating teachers.

(10) All infrastructural facilities like transportation and communication are available.

Organisation

The components of the curriculum for eight weeks may be divided into three convenient modules. The first module may be for a period of two weeks, the second and third for three weeks each. The gaps between modules are kept flexible to the discretion of the organisers of ASC as a preparation stage for teachers to take active part in the subsequent modules.

Weightage Assigned to Different Component of the Curriculum

Module No. and Weeks	COMPONENTS and SESSIONS A	B	C	D	Total
I (2 weeks)	6	27+3=30	—	4	40
II (3 weeks)	13	35+3=38	—	9	60
III (3 weeks)	5	9+3=12	40	3	60
8 weeks	24	71+9=80	40	16	160
%	15	50	25	10	100

In the design given here, the component A gets 24 sessions (15% weightage), the Component B gets 80 sessions (50% weightage), the Component C gets 40 sessions (25% weightage) and the Component D gets 16 sessions (10% weightage). There are forty sessions in the first module (A-6, B-30, C-nil and D-4), sixty sessions in the second module (A-13, B-38, C-nil and D-9) and sixty sessions in the third module (A-5, B-12, C-40 and D-3). Three sessions per module are kept in reserve in Component B for exigencies and spill-overs. The core staff of ASC are expected to adjust them with appropriate activities.

Rationale for the Design

The four component of the curriculum, A, B, C and D were analysed to find out the core component of the course. Component B emerged as the most important, new and very useful component among the four for most of the participants except for those from Education Department. It can help the participants to become not only efficient but also effective teachers. It encompasses philosophy, psychology, Indian education, Indian education system and pedagogy. Thirty sessions are set apart for this component in the first module to expose the participants to the various skills so that during the course of the year there would be sufficient time to practise them. On the basis of feedback, it would also be possible to make alterations in methodology during the remaining two modules. Hence it was decided to assign 80 sessions (3+3+3=9 in reserve) and fifty per cent weightage to the core component B.

The analysis of the components indicated the content component C as the next important one. It is set apart in the third module. All participating teachers are likely to have a good Master's degree in their specialisation with research degree like M. Phil or Ph.D. They require only updating and enriching of the content and practical experience. It is practically impossible to arrange sessions for 15-20 small groups in the ASC. Each small group with identical specialisation can be sent to the various Departments of the host university, where sessions can be held without any difficulty. They have to learn to apply the content and method together meaningfully and naturally. Individual pursuit of excellence is the ideal to be followed. When convenient small groups are not available, component C can be organised by selecting teachers from different batches. Hence it was decided to assign 40 sessions and twenty-five per cent weightage to the content component C.

When the core component B and the content component C get a weightage of 50 and 25 respectively, Component A gets only 15% weightage. It is expected to create an awareness of the role of teachers in the larger social context. Only six sessions are allotted to it in the first module, 13 in the second and 5 in the third module. The period of gap between modules can be fruitfully used by the participants to prepare discussion papers on the various subjects like secularism, equality, national integration, etc. The topics can be divided into meaningful related clusters and can be assigned to small groups of participants for panel discussion or symposium. Hence this component deserves only 24 sessions and 15% weightage.

When the three components A, B and C together get 90 per cent weightage, the remaining component D gets only 10% weightage. It aims at developing the initiative, personality and creativity of the teacher as an individual through various co-curricular and cultural activities contributing the talent to the social welfare. Hence this component is allotted only 16 sessions and 10 per cent weightage.

Evaluation

Evaluation of a formative nature as guidelines for future programmes of ASC and not judgmental in nature may be attempted. Feedback should be immediate after each session for 7-8 minutes in writing by teachers, resource persons and the members of advisory committee. Three kinds of feedback may be attempted.

(a) Feedback from the Participants

(i) *Feedback after each session*

After each session, feedback in writing may be collected from each participant. Structured feedback sheets may be made available in advance. They should be trained to give their feedback with clear instructions. Thus each participant is expected to give 160 feedback sheets immediately after sessions. Informal feedback also may be noted when made available in addition to the written feedback.

(ii) *Feedback after each Module*

At the end of each module, feedback may be collected from each participant using a separate structured sheet. Thus each participant will be able to give feedback three times about each module.

(b) Feedback from the Resource Persons

After each session, the resource person is also expected to give the feedback in writing using a proforma relating to the response and the involvement of participants, suitability of the content, method and techniques used and suggestions for structuring future programmes.

(c) Feedback from the Members of the Advisory Committee

When the members of the Advisory Committee attend the sessions assigned to them, structured feedback sheets may be provided to them to collect their reactions in writing specifically on each session and on each module.

Thus every day a large number of feedback sheets will be available from three levels. They have to be collected, coded, tabulated, classified and analysed to distil the findings. They may be discussed by the core staff and suitable modifications may be made in the effective functioning of ASC. It is desirable to have a research cell in the ASC to keep the records of feedback, analyse them and prepare reports about ASOP sessions, modules and resource persons including the core staff of ASC.

Resource Persons

The ASC will have a Director in the rank of a professor and two assistants in the rank of readers. They form the core academic staff. They are expected to be readily available resource persons especially for component B. An advisory committee for each ASC will be formed and they will prepare a panel of thirty resource persons, keeping in mind the components of the objectives of ASOP, content and delivery competency and availability for future programmes. They will be drawn from the host university and from other universities.

Participating Teachers

One teacher from each college and one more from big colleges with less teaching experience from different disciplines may be selected. The least experienced lecturers from the various Departments of the university also may be included. Since it is a residential programme, it helps national integration too. Opportunities should be given to all participants to contribute their best for the curricular and co-curricular activities of the ASC.

Conclusion

This is only a conceptual model of ASOP. Designing teacher education for future is not an easy task. A good design is not only desirable but also necessary for proper utilization of the scarce resources in higher education. Ultimately consumer satisfaction is the touchstone of a good model. It is hoped that ASCs will innovate and qualitatively improve tertiary education in our country through well-designed Academic Staff Orientation Programmes. □

ACADEMIC STAFF COLLEGES

Amrik Singh*

A positive outcome of the report of the Mehrotra Committee has been an extraordinarily brisk effort by the UGC to set up (in one go) something like 50 Academic Staff Colleges (ASCs).

The National Policy on Education had made a pointed reference to the crucial link between teacher performance and the quality of education. The Mehrotra Committee went somewhat beyond that and linked promotion from one scale to another with participation in training and refresher programmes to be organised by the Open University and other universities.

The fact of the matter is that the importance of initial training and then continued re-training of teachers was emphasised as long ago as the mid-sixties. Even when the Fourth Plan was being drawn up, this idea was mooted by the Task Force on Higher Education appointed by the Planning Commission. Something was done in consequence of that initiative. Over the years, teacher fellowships and similar programmes were promoted but nothing like a system got evolved. It is proposed to do so anew and, as they say, it is never too late to begin.

However, the haste with which the whole thing is being done raises all kinds of misgivings. Till 1986 there was not even a single Academic Staff College. During 1987 a number of them have got established, and before 1988 is out, there would be almost 50 of them. This pace of activity can give birth to problems some of which may not be even envisaged today. A bit of caution is therefore in order.

In this situation various kinds of problems are bound to arise. Funding, of course, should be no problem because all of it will come from the UGC. But how these programmes are organised, what kind of a format eventually gets evolved, what quality of instructors become available and are engaged, what is the extent and the degree of their motivation and capability, and the nature and mode of support extended to the ASCs by senior administrators are some of the factors that would determine the success or otherwise of this experiment.

In the outline of this scheme issued by the UGC, these as well as several other issues are m entioned. In theory most of these problems have been anticipated. For one thing these programmes are intended to be flexible and are to focus on the teachers' awareness of the social, intellectual and moral environment in which he operates. For another, these programmes must be made relevant to the Indian conditions. Quite a few other cautions are given. Each one of them is more or less in order and as far as the scheme goes there is little that one can object to.

Four different formats have been suggested for the ASCs. One, they can be established as separate entities within the university. Two, they can be established as a part of an existing Department of Continuing Education. Three, they may be established as a wing of the College Development Council which is funded on a hundred per cent basis by the UGC in almost each affiliating university. Last of all, an ASC can also take the form of being a State Institute of Educational Planning and Administration. Which one of these formats is adopted is left to the university.

As to the objectives of these orientation courses, more than half a dozen items are emphasised. These include understanding the linkage between education and economic and social development with particular reference to the Indian polity and the role of a college/university teacher in achieving a secular and egalitarian society, acquisition and improvement of the basic skills of teaching and also some understanding of the organisation and management of colleges and the universities. Each one of these objectives is admirably defined and one only hopes that in the actual working out of this scheme none of them will be ignored or under-emphasised.

As far as the curriculum is concerned, four components have been identified. Since it has been visualised that there would be a link between the performance of participants at these courses with their career development, it was logical to also evolve a system of evaluation. That has been considered under three headings. One is self-evaluation by the participants. The second is programme evaluation by the participants and the third is the formal evaluation of participants in terms of their achievement. These are salutary precautions and the scheme is to be commended for having given adequate attention to these issues.

A real problem is going to arise in terms of the format which these colleges are going to evolve for themselves.

(Continued on page 31)

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Academic Staff Orientation Scheme

Some Crucial Issues

K. S. Chalam*

Background

The University Grants Commission (UGC) has now finalised the Academic Staff Orientation Scheme (ASOS) and decided to establish around 50 Academic Staff Colleges in the country for this purpose. The 22nd April, 1987 communication of the UGC indicating the establishment of at least one Academic Staff College in each of the states in the country was received with an aura of mixed reaction from the academic community in the country. Later, the UGC has circulated the guidelines, the curriculum, etc., to the 47 universities in the country which have been identified as the host universities for the Academic Staff Colleges. In its usual method of functioning, the UGC has entrusted the responsibility of finalising the syllabi, method of operation, appointment of Directors, catchment area etc. to the academic community by organising workshops at six university centres in the country. A total of five workshops have been conducted at Andhra University, Madras University, Dr. Hari Singh Gour Vishwavidyalaya and Punjabi University during the month of July 1987. It appears that Calcutta University did not conduct the workshop out of the six universities identified for this purpose. The draft recommendations of the four workshops coducted in different parts of the country have been finalised at the workshop conducted at Bombay on 14 August 1987. However, the programme of the Academic Staff Orientation appears to have been finally accepted in its concrete form at the UGC office in Delhi in the third week of August 1987. Now, the universities which have been identified for the establishment of Academic Staff Colleges are busy in establishing the colleges and procuring personnel for this purpose: Therefore, it is necessary to examine some important issues that are to be clarified beforehand for the effective implementation of the scheme. As a person who has experimented with a variant of the programme for the first time in June-July 1985 with the assistance of the UGC and also as a participant at the two workshops held at Andhra University (as Co-director) and Dr. Hari Singh Gour Vishwavidyalaya, I feel it is necessary to share my ideas with the readers of University News for a discussion on the issues involved.

It is not for the first time that the deficiency in teaching among the university and college teachers has been recognised by a national body like the UGC. In fact the Radhakrishnan Commission had fully recognised this deficiency in 1948-49. The Kothari Commission which came sixteen years later, had devoted a considerable part of their deliberations to this issue in their report. Similar attempts have also been made by expert committees in the developed countries even much earlier than the problem is recognised in this part of the world. Lord Robbins, Prof. Hale, Prof. Parry and many others were enquiring into several aspects of teaching and learning in British universities. Having realised the importance of it, the Unesco has brought out a document on the post-secondary methods of teaching. The UGC has also been experimenting with a number of programmes like COSIP, Faculty Improvement, Refresher Courses, Workshops, etc. for improving the teaching-learning process in the Indian university system. But, all these programmes have been organised without any long range objectives and without coordination among these programmes. It is for the first time that a comprehensive programme is conceived in terms of the present Academic Staff Orientation Scheme. Perhaps, the experience gained by UGC in sponsoring the above programmes might have given the fillip for undertaking this programme. Further the age old objective of preparing students in the art of critical dissent though continued to be one of the important objectives of higher education, the explosion in knowledge and greater demands of science, technology and industry and the complexities of society have also widened the scope of higher education particularly university education in the country during the second part of the 20th century. This change in the scope and purpose of the colleges and universities have influenced the teaching profession. New forces have started entering into higher learning institutions which have also influenced their administration and management. Taking all these signals into consideration, the UGC (on the basis of NPE, 1986), have started revitalising the system. In this process, the starting of Academic Staff Orient-

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tion Scheme (ASOS) is considered as one of the important programmes of action of the Government in the direction of change and development in higher education in the country. Under the ASOS, the UGC will support the establishment of Academic Staff Colleges to plan, organise, implement, monitor and evaluate on regular basis academic staff orientation programmes for newly appointed college and university lecturers and also the refresher programmes for serving teachers. Though the guidelines of the UGC are not explicit about the involvement of other functionaries of higher education, the Scheme is broadly drawn for all those who are involved in the system. But, this does not mean that the ASOS is without any inconsistencies. Let us examine the important units of the Scheme and the absence of clarity on certain issues of the whole programme.

Responsibilities of Teachers

With the change in the objectives of higher education, responsibilities of the functionaries of higher education, particularly the teachers have substantially changed. No more a teacher in a college or university is satisfied with his mere lecturing in the classroom nor the students and society at large are satisfied with lecturing alone. The functions of the teaching profession have increased manifold. They include teaching, learning, research, innovation, evaluation and extension work. The manifold activities of the teacher in higher educational institutions particularly at the university stage do not confine the teacher now to his four walls of the classroom or mere teaching. This change in the scope of teachers' activity must be properly resumed and put in proper perspective for the 21st century. The challenges of the academic staff including the administrative staff of the 21st century colleges and universities must be well conceived now to give a broad direction to the whole system. This requires proper orientation of the staff not only in the objectives of higher education but also in the techniques of the profession. The traditional approaches of teaching and administration in the higher educational institutions must necessarily change with the change in the objectives of the system and the profession. Therefore, the teachers in colleges and universities must equip themselves in techniques of teaching, research methodology, upgrade subject matter, develop evaluation skills and administrative capabilities and training in field work and so on. Similarly the administrators should also reorient themsleves in the new techniques of management. The Kothari Commission had pointed out the need for such an orientation about two decades ago. Unfortunately no university in the country seems to have taken the advice seriously. Now the UGC has come out with concrete proposals to implement those recommendations in this particular area of higher education. The result is the organisation of Academic Staff Colleges in 47 universities in the country.

The present problem in the teaching profession is the lack of orientation in any one of the objectives of the profession, as mentioned above. Gone are the days wherein teaching was considered as an 'art'. Along with it, the inadequacy of traditional methods of teaching have come out increasingly, though their use is still relevant in certain areas of study. Further, the newly appointed teachers in the colleges and universities are found too conscious about the lecture content and inadequacy of their own knowledge. They concentrate not on how to deliver the lecture but only on the content. Sometime, they lecture far above the comprehension of the students due to over preparation and enthusiasm. Moreover, the new recruit is not equipped adequately with necessary instructional skills that make the classroom teaching effective and interesting to a group of students who are no more homogeneous like that of the yester years. Further, most of the teachers follow the age old "dull pointless tradition of giving lectures and dictating notes that has passed on from generation to generation". This has to be replaced. Mere lecturing can only develop verbal abilities of students whereas the student is expected to come out of the colleges and universities with a number of abilities and skills to face the real situations in life. Thus the lecture method has to be supported and supplemented by alternative ways of presenting information to the students and involve them in the process of learning. In this context the Unesco document on "Methods of Teaching in Post-Secondary Education" will be of much help to find alternative methods of teaching rather than replicating the methods that are being imparted in B.Ed. colleges for secondary school teachers. The UGC seems to be clear on this aspect as it has sufficiently cautioned not to "replicate traditional B.Ed. course" in this programme.

Given the responsibilities, the teachers in the universities and colleges have to identify themselves with the roles of a disseminator of knowledge, creator and inspirer of new ideas. Thus the roles the teacher is expected to play in our colleges and universities now do not confine him to the classroom lecturing alone. Moreover, university education involves development of concepts, attitudes and skills. These can be developed only in group and independent study techniques. It is also essential for the teacher to know about his place and role in the emerging Indian society. In addition to these, the teacher is also expected to develop skills of evaluation as it helps the teacher to acquire the necessary information to improve the classroom instruction. Most of the newly appointed teachers and administrators are not aware of the university statutes and the functioning of the various academic bodies and the management of the education system. Therefore there is a need to orient the teachers in these matters to realise their role and responsibility in (to) the system.

Unlike the functionaries of the civil administration or for that matter any administration, the academic administrators like the Head, Principal, Dean and other high functionaries of colleges and universities are not provided with any systematic orientation. Every organisation today maintains its own staff college to orient and train their staff. The time has now come to orient our academic administrators in the techniques of management as the volume of work and diversity in its method have changed considerably. Another important functionary in the colleges and universities who is not quite often given any significant place in teaching-learning process is the para-teaching staff member. The para-teaching staff like the Laboratory Assistant, Foreman, etc., in the sciences, engineering and technology faculties are to be trained and equipped now not only in new methods of instruction but also in the content of their own area in view of the growing use of such staff in our academic institutions. The academic staff orientation scheme is silent about this group and many others.

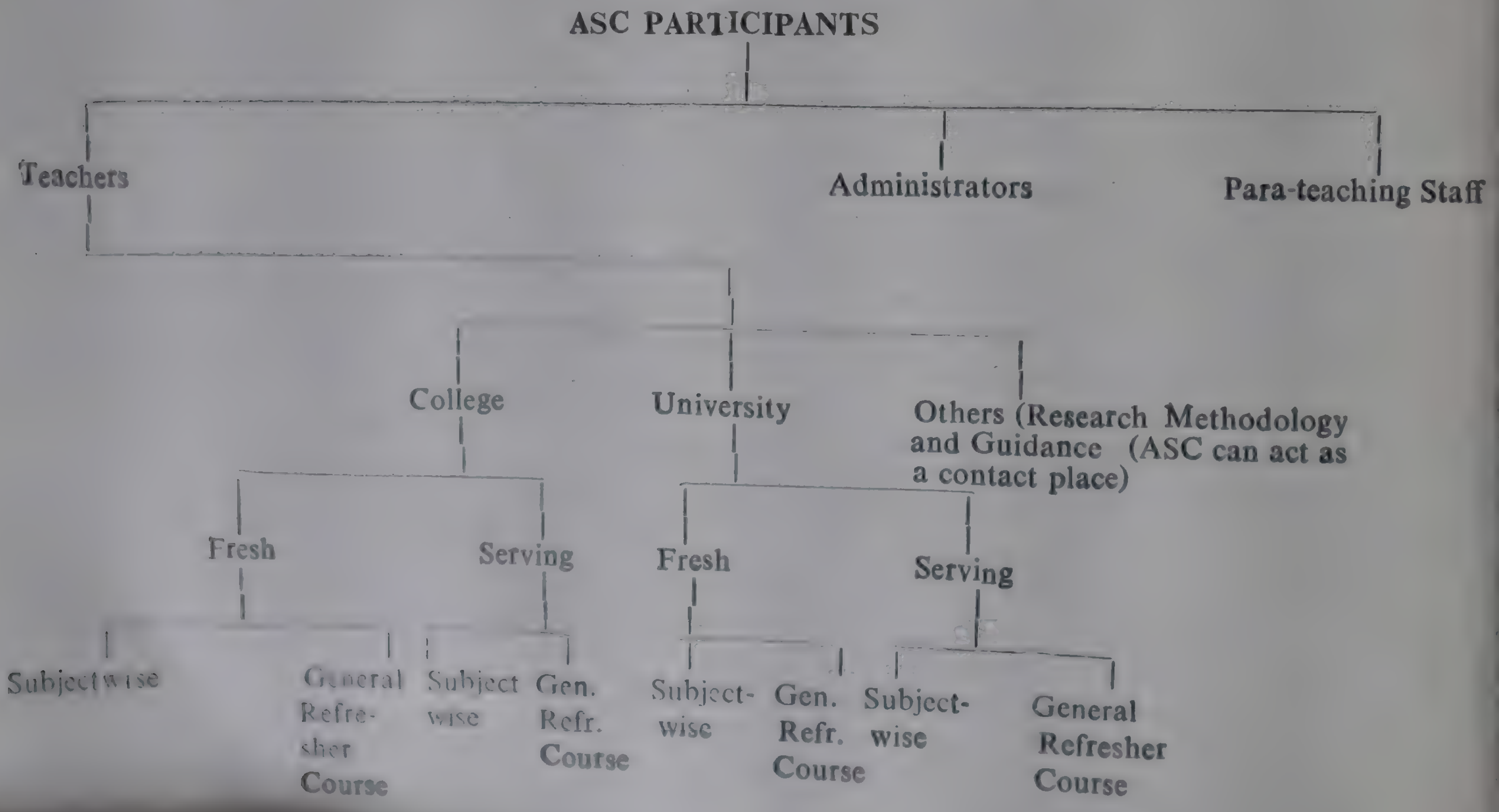
Target Groups

The proposed Academic Staff College seems to have taken only one clientele into consideration in devising the programme. But, a serious examination of the objectives for which the college is proposed to be established provides us the clue that it can be extended to a voriety of academic functionaries in the colleges and universities. The following chart provides a classification of the target groups who can be brought under the aegis of the Academic Staff College.

The classification of participants who can be oriented in the Academic Staff College (as shown in the chart) indicate the wide scope and the need for such an orientation. But, the UGC guidelines appear to have not mentioned about the various gradations and categories of the participants of the Academic Staff College. This needs to be considered while offering the content of the programme and its organisation.

Programme Content

The content of the programme of the orientation programme is divided into 4 components. Though


ASC PARTICIPANTS
Teachers
Administrators
Para-teaching Staff
College
University
Others (Research Methodology and Guidance (ASC can act as a contact place)
Fresh
Serving
Fresh
Serving
Subjectwise
General Refresher Course
Subject wise
Gen. Refr. Course
Subject-wise
Gen. Refr. Course
Subject-wise
General Refresher Course

some details are provided in the scheme of the UGC it is not very clear as to what are the common components of the programme for the various categories of the participants and what are the specific areas that are to be given to specific categories of participants. It is mentioned in the guidelines that the first two components of the programme contain topics relating to the linkages between society, environment, socio-economic development and education to help the teacher realise the larger context of education and the role of the teacher in our society. Some illustrative topics are also given. But the list seems to have contained only the contemporary problems and issues. No topic is prescribed to understand the global context under which higher education in the country is functioning. It is also essential to understand the experiences of other societies which are pursuing development that is akin to India.

The core component of the programme appears to be provided in component B. This component is devised to impart basic skills to the newly appointed teachers for effective classroom teaching. But, the basic problem in offering this component is the heterogeneous nature of the participants who come from different disciplines, experiences, resource base, dispersed areas and so on. And therefore, each group is to be provided with sufficient orientation in relation to their needs and expectations of their specific situations. No doubt, the topics given in the component 'B' in the guidelines offer a uniform content. But, the diversity and uniqueness in each category of the participants, such as Social Sciences, Physical Sciences, Technology, Engineering etc. courses and the teachers of these courses need to be kept in mind while devising the curriculum for the participants.

It appears that the changing responsibilities of the teachers and academic staff in higher education have not been taken into consideration in devising the content. For instance, a university teacher is expected to conduct research and bring back his results to the classroom situation and also evaluate his programme. No provision seems to have been made to develop research skills, field work training and other such issues which are more relevant in university education in the 21st century. In a recent article published in the 'Journal of Higher Education', December 1986, Tolly B. Tetenbaum and Thomas A. Mulkeen have designed a teacher education programme for the 21st century based on 9 core areas. The nine areas in their model include, field based, problem centered, technological device oriented, experimental sharing, developmental, competency based, expertly staffed, critical mass oriented and an open ended programme. Though the model is envisaged for the school education of the 21st century, its basic features can be taken into consideration in devising content for the academic orientation of the programme. Further, there is hardly any mention of a topic which is relevant to a particular group of participants such as serving teachers, administrators and para-teaching staff etc. It is also not mentioned how the subject upgradation component can be offered.

An important link between our realities and expectations from ASOS is to be established in devising programmes for teachers of higher education. The new techniques of teaching and other models of orientation require a situation that is quite different from our realities. Our educational institutions have been built only during the last one hundred years or so on a traditional model. The classrooms, the lecture halls, laboratories, field work trips and all the technology of teaching is based on a given model. If we intend to bring any change in the methods, first the curriculum must be revised, the classrooms are to be altered and the whole structure need to be changed to facilitate the new methods to be used in our higher education system. It is necessary to take into consideration, the single faculty colleges, colleges in remote areas without any resources and facilities and the peculiarities of the Indian conditions in accepting the new teacher equipped with modern techniques and knowledge. The expected change that is planned through this programme and our capabilities and realities may throw up a number of contradictions that are to be properly studied and resolved. And in this process, an indigenous and relevant content for our situation seems to be more relevant and feasible rather than starting with ambitious programmes. However, this does not restrict us to study the modern methods as an enquiry but it should be devised for the Academic Staff College in such a way that it matches our realities.

The topics prescribed for the management and personality development component are not found to be in consonance with the objectives for which this component is offered. The NIEPA model of the programme under this component may not fit into the system as the programmes of NIEPA are basically devised for administrators. Further, a newly appointed teacher does not require the orientation in management because he cannot understand the relevance of it without being exposed to the system. Of course, an elementary knowledge about the functioning of the administration, rules and regulations may help him avoid certain initial problems in settling himself firmly into the system.

The Academic Staff College is also expected to monitor the professional growth of the teachers, academic staff, etc. However, no concrete proposal is made to monitor their growth and the methods through which it can be done. The western models of evaluation of teachers may not help to bring the desired results due to our socio-cultural situation. New and innovative techniques have to be devised to monitor and evaluate the professional growth of our academic staff in higher educational institutions. The Academic Staff College is provided with another important task through which the confirmation of the teacher is made. It is not clear as to the legal status of such a task being assigned to an academic institution whose legal status is provisional at the moment. The response of the teaching community to this proposed ASOS need to be taken into consideration to ensure their active participation in the programme.

Organisation

Though the document on the orientation programme is very much concerned about the methods through which the classroom teaching is to be made effective, it is not very clear how its own programme can be offered. The method of its organisation and delivery need to be devised so as to make the four modules into workable details for practical implementation at the Academic Staff College level. The college has to equip itself with all the required equipment, buildings, resources in the manner in which the trained teacher is expected to take up classes in the colleges and universities. It is not sufficient if the organisational structure is fixed so that everything will go according to it. It must be decided before hand the legal status of this institution and its relations with the university and Government. Because ultimately the Government must take a decision to depute its teachers for training and accept its recommendations for the confirmation of the teachers. It is better to organise one of the colleges in a state as a unit of NIEPA to serve as a feedback agency of higher education in the state if the state has more than one such college or a similar unit within the Academic Staff College can be set up if it is the only college in a state.

It is better to offer the programme in three units, the first two being organised as one unit of four weeks duration. After obtaining the necessary training methods, the newly appointed teachers will go to thei places to work and get themselves acquainted with the situation for some time and come back to the college again to fill up his deficiencies for a week or two. After that he will go back to his place of work and finally returns to the Academic Staff College for the last spell of orientation in personality development and orientation in management of the system. By this time he will be in a position to understand the environment of the institution, his task and his place in the higher education system. It can also be offered in two units of equal duration to avoid expenditures on the travel of the deputed teachers to the Academic Staff College. Now, the UGC seems to have accepted the idea of offering it in two spells of equal duration so as to conduct more number of programmes in a year. As per the latest indications, the UGC appears to be in a hurry to start the programme even by reducing the duration of the programme. This is understandable, if it is on an experimental basis. But, as a regular and permanent programme, the ASOS is expected to look into deeper issues and should attempt to resolve them to obtain good results.

Some Unsettled Questions

As the UGC is now very keen in implementing the programme throughout the country at the earliest, the problems noted above may attract the attention of the functionaries who are associated with this programme. The scheme has brought a more serious issue for discussion at the workshops conducted in the five universities mentioned above. It appears that the teachers in higher education particularly at the university stage have virtually divided into two camps. The experts in the field of pedagogy wish to establish their control over the entire programme. While the teachers in general, the subject experts doubt the veracity and relevance of the pedagogues in university teaching. The subject experts are of the opinion that in the university teaching, where a large part of the input of teaching in general include the research material of the teacher, pedagogy does not play any significant role. It is said that the theory of relativity can be better explained by Einstein who developed it and any amount of pedagogy imparted to J. Dewey (or to any one who is not familiar with the theory) may not be effective in imparting it to the student, despite his teaching abilities. Unfortunately, the entire ASOS of the UGC is misunderstood by all as the purpose for which it is drawn is overshadowed by the munificent grant that is promised by the UGC in establishing the Academic Staff Colleges. It is observed that very few academicians in the country have paid attention to the objectives for which the ASOS is made, and some of those who are actively involved in it see a career in the ASOS. This is clearly indicated in some of the proposals submitted to the UGC wherein a parallel university is proposed within a university and in some cases the qualifications for the Director of the Academic Staff College have been proposed in such a way that the person who is entrusted to draw the plan alone will be suited to the post and none else.

However, the ASOS is the most innovative programme that has been put before the academic community of the country to improve standards at various levels of the academic profession. It is not confined to teachers alone. It is a model to capture all functionaries of the system. Yet, the scheme has not taken into consideration the real problems in the portals of higher learning institutions. The dichotomy between the students who are taught in mother tongue and the English medium oriented research programmes, the redundancy of the learning material and the realities of life and developments in the fields of specialisation in higher education, etc. have not been addressed and resolved. In fact, the ASOS should have concentrated more on the socially relevant and productively useful syllabi and curriculum to save the system from redundancy and decay. What is the use of providing all the methods of teaching, subject upgradation in irrelevant material and so on. 'It is like imparting the tropical agriculture to Eskimo children'. ☐

ACADEMIC STAFF COLLEGES

(Continued from page 25)

This is not to suggest that one format is better than another. More than anything else, it is the kind and quality of staff which is going to be a critical factor. Where are the instructors to come from and with what kind of background and outlook ?

So far there is not a single book by any Indian author which deals with the issues of what it means to be a teacher in an Indian university or college, what kinds of problems are encountered in the classroom and outside and how those can be dealt with.

Even if it is assumed that each ASC would have five members of the core staff (and it is difficult to conceive of a smaller number) this would mean at least 250 people with the right aptitudes and the requisite degree of competence. One wonders if this aspect of the problem has been given due attention. In a sense, the universities are branching out into a new area of development. It stands to reason that some kind of advance preparation was not only necessary but perhaps indispensable.

In this connection one would like to recall the somewhat analogous experience of Indian universities in establishing Departments of Business Management. In about two decades, 50 or so of them have got established. Not even one quarter of them are doing as well as they should. ☐

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Professional Preparation of University Teachers

Sneha Joshi*

Institutions of higher education have to play a a very vital role in the national development. They are the major sources for providing trained and skilled manpower required for the national development. Alongwith purveying of knowledge, it has a very special role in generation of new knowledge through continuous researches. The universities and colleges, regarded as temples of learning, thus occupy a very prominent position. From times immemorial, the Indian universities had acquired a place of glory on the world map. But the ancient universities were very different in character from the modern universities established by Britishers in 1857 at Bombay, Calcutta and Madras. The growth of higher education was continuous thereafter. But it was more rapid since 1947 when we achieved political freedom and the government took a lot of interest in the quantitative and qualitative improvements in the field of higher education. Thus, at present, India has got over 150 universities and more than 5000 colleges. But it is a fact that no system remains static because change is inevitable in all walks of life and so in education. The Indian higher education system has successfully faced various challenges over years and once again it is preparing itself for leaping into twentyfirst century, an era of modern electronic technology, mass communication media and computers. The rapid development of modern science and technology has further necessiated enhancement in the pace of change for the university system. When one looks at the role of universities in fulfilment of the new requirements, the teachers emerge as most important component of the university system because afterall they will be incharge of the action on the scenario.

The national policy of education (1986) has regarded "Teachers' Training" as one of the most important aspects. It states that higher education provides people with an opportunity to reflect on the critical, social, economic, cultural, moral and spiritual issues facing humanity. It contributes to the national development through dissemination of specialised knowledge and skills. Being at the apex of the educational pyramid, it has also a key role in producing teachers for the education system. The policy has also stated that provision will have to be made for directing efforts towards the transformation of teaching methods. Audio visual aids and electronic equipment will be introduced. Development of science and technology, curricular material, research and teacher orientation will receive the attention which will require preparation of teachers at the beginning of the service and continuing education thereafter.

Programme of Action (1986) has very clearly mentioned that since the present system does not accord proper economic and social status to the teachers of higher education and there is lack of sufficient opportunities for innovative and creative work for their professional development, it is necessary to design and organise orientation programmes in teaching methodologies, pedagogy, educational psychology for all fresh entrants in this field along with the refresher courses for in-service teachers. Indira Gandhi National Open University (IGNOU) would run special courses to promote self learning among teachers. Thus, this supports the idea of Teachers' Training in the system of higher education.

If one looks at the historical background of teachers' training, one is surprised to note that though the training for Primary, Secondary and Higher Secondary teachers is made compulsory in the form of Primary Teachers' Training (P.T.T.) and Bachelor of Education (B.Ed.) courses, there is no provision of the compulsory training for the teachers at higher education level. They are supposed to take full load of their teaching right from the beginning. They would design their teaching programme without orientation to the methods of teaching. They will not be aware of psychology of learners whom they face, they are not aware of organisation of tutorials, seminars, etc. and they are also not oriented to the use of technology in education. It was Education Commission 1964-66 (Kothari Commission) which emphasised in concrete terms the need for a training course for fresh and newly appointed university or college teachers. It was pointed out that such course would give them a reasonable understanding of educational objectives and purposes. The Commission has very rightly remarked that teaching is a skilled profession like other highly skilled professions and hence training should be an essential qualification for the new entrants.

**Centre of Advanced Study in Education, Faculty of Education and Psychology, M.S. University of Baroda, Baroda.*

"The rigorous training that every entrant teacher at university has passed through while being a student of a particular discipline pertained essentially to the content of the discipline. He was not exposed, relevantly enough to the way this knowledge can be transmitted to young minds in such a way that they could absorb it." (Prof. Yadav, Dr. Lakshmi and Dr. Roy—1986). This view also supports the need of a training course for teachers in higher education. "Conceded that the young lecturers are experts in their subjects. but they are neophytes, because today's postgraduate students can be tomorrow's teacher in the same institution without receiving any professional preparation". (Taneja—1984). Therefore, various skills which make the teachers more competent are needed to be developed through a training programme. "For capability of doing research and for developing academic excellence, a university teacher gets education in the discipline of his choice. But for getting expertise in teaching, he needs some training". (Mathur—1987).

If one looks at the few attempts made in the direction of starting such courses, one finds that the University Grants Commission (UGC) had initiated such scheme in 1970 to organise summer courses for juniors and fresh lecturers in teaching methods. As pointed out by the report of the Centre of Advanced Study in Education (CASE), Baroda, 1980, the attempts were made in the campuses of Bombay and Pune to run regular courses for methods of teaching. The Calicut and Bombay Universities were running a Diploma course of one year's duration. The in-service courses were run by Madras, Mysore and Osmania Universities. The unit on higher education in the CASE (department of education) of the Faculty of Education and Psychology, M.S. University of Baroda have been conducting a short term methodology course for university teachers during their probation period from 1975 onwards.

But all these courses do not reflect a uniformity amog them. Moreover, they were not the compulsory courses in the form of pre-service qualification like B.Ed. for those who wanted to join the teaching profession in higher education. It was also felt that the task of training pre-service and in-service teachers should be with a separate institute instead of with one of the departments of the university and that is how the concept of "Academic Staff College" started gaining importance. When one thinks of such an attempt, one has to think of the inputs for such training with respect to the teaching, research and extension.

First of all, the teachers of higher education have to be made aware of the larger context of educatio and the role of teacher in the society. They mus understand that education is not a phenomenon whic exists in isolation but it has linkages with society environment and development of a nation. For thi purpose, ideas regarding secularism, multilinguism unity in diversity, national integration, equality o opportunities, modernisation and urbanization, rura development, environmental imbalances, value education, role of youth, and last but not the least, th role of a teacher in this context, are to be explaine in detail. Along with this, they should know abou the philosophy of Education (Western as well a Indian models) whereby they also know about role o educational institutions, family, and the state in the development of students.

Along with the philosophy, they must be able t understand psychology of learners which is so vital for a teacher. They must understand learning as a process which is affected by various factors at different stages of human growth. They must be able to identify the problems which learners face and should be in a position to take remedial steps for them. They must be familiar with the science of teaching. This includes teaching methodology, evaluation methodology, classroom techniques, use of teaching aids, use of educational technology, production and use of teaching materials.

They should also know about the Indian Education system—higher education in particular which includes its structure, organisation, role of ministries, role of various bodies which promote higher education, financing pattern and problems which are faced by the system over the years. They should also know about the modern trends in the system like educational technology, distance education, etc.

Along with teaching, the teachers of higher education have to perform two important functions, namely, Research and Extension. For this very purpose, they are also to be trained in research methodology whereby they would be encouraged to prepare research papers, to undertake small experiments and action researches and would also work for their own doctoral and post-doctoral work.

They should also be trained for involving themselves in certain community service programmes whereby knowledge generated through researches can be extended for the benefits of society by the education system which is one of the sub-systems of a social system.

For purposes of providing above mentioned urse contents, mere classroom lectures will not be desirable proposition but there should be a provi- on for discussion sessions, seminars, brain storming ssions, debating, role playing, gaming, etc. There ould also be microteaching and simulation teaching ssions for trainees so that they can be acquainted with aching work and they also get feedback for their ork. They should also be given small research pro- cts so that it not only provides them training for the plication of research methodology but also trains em for the field work if the nature of the study pro- des the scope. Several such new ideas should be ought of for orienting the new entrants.

National Education Policy (1986) has very timely mphasised the need for University Teachers' profes- onal orientation. UGC has come out with a scheme f Academic Staff College (ASC) for each state.

At present, there is no known model of an acade- ic staff orientation programme that can be replicat- d. Therefore, it is necessary to evolve a model that s most suited to the Indian conditions. It is recom- ended that an Academic staff orientation course ASOC) should be of eight weeks. The period should e further divided into two or three modules (4+4 eeks, or 2+4+2 week, etc.), hence participants are ble to return to their colleges/departments between odules and implement the skills and strategies cquired during the orientation course. In order to ake an orientation course effective, the ASC will aintain a systematic record of all their participants nd their achievements, their professional growth and hange in their capabilities as teachers.

bjectives of Academic Staff Orientation Course

The objectives of the Academic Staff Orientation ourse are to enable the newly appointed lecturer to :

(a) understand the significance of education in eneral and higher education in particular, in the lobal and Indian contexts;

(b) understand the linkages between education and conomic and socio-cultural development with parti- ular reference to the Indian policy where secularism nd egalitarianism are the basic tenets of society;

(c) understand the role of a college/university eacher in the national goal of achieving a secular and galitarian society;

(d) acquire and improve basic skills of teaching at the college/university level;

(e) be aware of developments in his specific subjects;

(f) understand the organisation and management of a college/university and to perceive the role of a teacher in the total system;

(g) utilise opportunities for development of personality, initiative and creativity.

It should be necessary to link the performance of participants at the course with career development. Hence, it is recommended that confirmation of the newly appointed lecturers should be linked with successful completion of an academic staff orientation course (ASOC). Those lecturers whose achievement at a course is unsatisfactory should be permitted to go through the course a second time before confirmation. Those newly appointed lecturers who are already confirmed should be required to undergo the course.

Since National Education Policy (1986) has strongly recommended professional preparation of University teachers, UGC has proposed the Academic Staff Orientation Scheme. This scheme could be strenghthend by various good quality teacher preparation programmes which will prepare teachers who are highly motivated, suitably qualified and well equipped to take all the professional roles and challenges of their profession. □

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ALAGAPPA UNIVERSITY, KARAIKUDI

HIGHLIGHTS

1. The University was formed in May 1985 and was recognised by the University Grants Commission in December, 1986.
2. It is the eleventh University in Tamilnadu and is of an unitary type which aims at developing itself into a research University; its motto is "Excellence in Action".
3. The University has 9 Departments, 72 Faculty members and 560 students at Post-Graduate and Research level. It has a sprawling campus of about 420 acres.
4. New and socially relevant courses of study in advanced spheres of Science include Post-Graduate Studies in Computer Applications and Industrial Chemistry with specialisation in Electro Chemistry and Textile Chemistry.
5. Unique in the whole of India is the M.A. Corporate Secretaryship Course being offered by the University to cater to the needs of the fast developing corporate sector.
6. Full-time and part-time research at M.Phil. and Ph.D. level are offered by the University. Summer Sequential M.Phil. Programmes are also in progress.
7. The University plans to start Postgraduate programmes in Atmospheric Physics, Instrumentation, Applied Mathematics, Entrepreneurship, Educational Technology and Temple Art and Architecture.
8. M.Phil. Course in Industrial Sports and Labour Welfare and a Course in Recreation and Sports Journalism are to be introduced in the Department of Physical Education.
9. The University hopes to launch shortly the University Extension Centre for Women's Studies and Rural Technology.
10. The proposed Women's Studies Centre would study the various aspects of Women for their welfare and development.
11. The Centre for Rural Technology has computer oriented, science oriented and management oriented programmes like :

(i) COME FORWARD	(Computer Oriented Modernised Education for Women's Avocation and Rural Development)
(ii) WE SPREAD	(Women's Extension Service for Planned Rural Enrichment and Development)
(iii) PRIDE	(Programme for Rural Industrial Development and Entrepreneurship)

for development of rural womenfolk.

Equality of Educational Opportunity and the New Education Policy

Satya Pal Ruhela*

SOME CRUCIAL IDEAS

A lot has been written and said on the problem of equality of educational opportunity in India and abroad during the last forty years. The New Policy of Education 1986 has devoted a full section to this problem and again a lot of interest has been generated in our country in this crucial problem. The document **Programme of Action** (1986) highlights the various concrete details of the actions proposed to be taken to translate the policy statements into actual practice.

The policy document has been prepared by a number of experts in consultation with others at various levels, and also Programme of Action document is the result of the collective wisdom of so many study teams. Therefore, it would be presumptuous on my part to claim that I will be presenting anything absolutely new or radical on the problem. However, as a sociologist of education, I would like to make a brief and realistic comment.

I would like to invite the attention of the readers to some of the crucial ideas and research findings in regard to the problem of equalization of educational opportunity in this section, and then comment on the prospects of our success in India in the light of these criteria as applied to the provisions of the New Policy of Education.

While a lot has been said by sociologists and educationists on the problem of educational opportunity, I consider the following statements as the most crucial or critical :

(i) "...equal access to education is only a necessary—not a sufficient—condition for justice. Equal access is not equal opportunity. This must comprise equal chance of success."[1]

(ii) "Equal opportunity for all does not mean nominal equality, the same treatment for every one, as many still believe today; it means making certain that each individual receives a suitable education at a pace and through methods adopted to his person."[2]

(iii) "Equality or justice rather than flat equality demands that men should be treated differently, if there are relevant grounds for so treating them"[3]

Protective discrimination is needed by disadvantaged groups like women, scheduled castes and scheduled tribes, etc. "This will pave the way for equal participation of all in the material and intellectual culture of society..."[4]

(iv) "In a class society like ours, there is a certain inbuilt resistance to measures of equalisation of educational opportunity."[5]

(v) "...even when all goes well, the result of any scheme based on equalization of educational opportunity may not be what is expected."[6] A number of research studies in UK, USA and India have shown this.

(vi) British Sociologist Halsey's most significant research finding is "the persistence of influences which flow from class origin to educational attainments."[7]

Studies of Westergaard and Little conclude that "this long-term trend towards a reduction of social differentials in educationnal opportunity at the secondary stage is moderate and limited."[8]

(vii) American sociologist Havighurst and his associates found that children tended to reflect the educational values of the neighbourhood."[9]

(viii) American sociologist Coleman's wellknown finding was that "what accounts for poor performance is not so much unequal educational provision but the character of school mates. In other words, the most significant correlate of achievement test scores is the social class climate of the school's student body."[10]

(ix) According to sociologist James Mckee : When low social origin acts to produce an inferior education for those of low status, two interlinked processes occur. First, the children of

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the lower strata are defined by particularists criteria (race, ethnic, or classs), which ascribe to their inferior qualities or attributes, so that the school treats them as inferior from the outset. The very definition of their inferior nature serves to create weak self-images as well as little belief that academic achievement is a rewarding activity for them. Their failure to perform well then only serves to provide justification for those who had said they could not—an example of what sociologists call the **self-fulfilling prophesy.**

Secondly, children from low status parents acquire their social values in an environment in which those of the school are largely absent. Academic achievement, aspiration for high social status through educational achievement, and the discipline necessary for academic performance—these values are not cultivated in the families, the neighbourhoods, and the peer groups of the lower class.[11]

..."the same school systematically allocates less teaching resources to those lowest in the class structure of modern society, even though this may be contrary to any public policy and can never be publicly acknowledged".[12]

(x) A.N. Pandeya mentions three significant components of the problem of equalization of educational opportunity :

(a) **Egalitarianism :** The felt needs and deprivations of the people concerned should be analysed—the bearing of the class or status position of the parents on the inequalities suffered by them, and whether they regard this form of deprivation due to the capacity of the persons to shape things, and what contribution could education make to the person who misses education.

(b) **Excellence :** This depends on several factors such as, plans of parents and child for the latter's life, self-image of the child, his family background, encouragements or discouragements received from teachers, neighbourhood, peer group influences and making available equal opportunities in the form of shool.

(c) **Concept of development :** development of the community through the development of individual depends on two sets of factors : social (non-personality) variables, and internal (personality) variables.[13]

(xi) The concept of 'compensatory education' for the culturally deprived and the socially disadvantaged is now universally recognised as a necessary condition of equality of educational opportunity.[14]

(xii) "Equality of educational opportunity does not just mean more and more education for more people. What is even more important is the kind and quality of education that is given to people and purpose for which it is given."[15]

(xiii) "Today in India there is segregation in education itslf. Two kinds of schools are functioning side by side : (I) a few private schools which charge high fees and cater to the upper classes, and (2) a large number of publicly maintained schools which provide free education to the masses. The former are far superior to the latter both in terms of the curricular as well as the co-curricular programmes."[16]

Keeping these ideas and research findings in mind, let us now try to see what our new **National Policy of Education** (1986)[17] has to offer in the direction of equalization of educational opportunity to our disadvantaged groups of people.

II

NATIONAL POLICY ON EDUCATION (1986)

Let us very briefly summarise the provisions of the National Policy on Education 1986 relating to equalization of educational opportunity. The document assures us that special emphasis will be laid on the removal of disparities and to equalise educational opportunity by attending to the specific needs of those who have been denied equality so far.

The New policy says that new values will be developed in women through redesigned curricula, textbooks, and the training and orientation of teachers, decision-makers and administrators, and the active involvement of educational institutions. Elementary education and vocational, technical and professional education at different levels will be promoted for the benefit of women.

For Scheduled Castes, the New Policy proposes to give several incentives like incentives to indigent families to send their children to school regularly till they reach the age of 14, Post-matric scholarships, hostels at district headquarters, location of school buildings, Balwadis and Adult Education Centres in such a way as to facilitate full participation of scheduled castes, constant microplanning and verification to ensure that the enrolment, retention and successful completion of courses by SC students do not fall at any stage and provision of remedial courses to improve their prospects for further education and employment.

For Scheduled Tribes, the suggested measures include opening of primary schools in tribal areas on priority basis, development of their curricula and devising instructional materials in tribal languages at the initial stages, residential and Ashram schools, incentives, Anganwadis, Non-formal and Adult Education Centres on priority basis, etc.

For Minorities, the New Policy is all for the honouring of the Constitutional guarantees to them, protection to their languages and culture, and promoting objectivity and integration based on appreciation of common goals and ideals in conformity with the core curriculum.

For the Handicapped, the New Policy seeks to provide integrated education, special schools with hostels, adequate arrangements for giving vocational training, and reorientation of teachers' training. For illitrate adults, the New Policy proposes establishment of centres in rurul areas for continuing education, workers' education, post-secondary education institutions, wider promotion of books, libraries and reading rooms, use of radio, TV and films, creation of learners' groups and organizations, programmes of distance learning, organising assistance in self-learning, and organising need and interest based vocational training programmes. The New Policy has talked of launching 'Operation Blackboard' to equip all primary schools, encouraging early childhood education in a big manner, spreading distance education through open universities, starting various programmes of non-formal education, starting pace setting schools in the form of Navodaya Vidyalayas, and encouraging voluntary agencies to spread education.

III

A CRITICAL APPRECIATION

A cursory perusal of these provisions of the National Policy of Education shows that the main emphasis is on assuring us on provision of educational opportunities by opening more schools, providing more incentives and facilities, scholarships and hostels, etc. The policy makers make high-sounding claims of spreading early childhood education, non-formal education, adult education, vocational education, special education, rural and open universities and of making education as "an agents of basic change in the status of women", etc., etc. But where are the funds and the real political will to do all this ?

Secondly, the policy makers, it seems, have not bothered to face the realities of our social and educational context. There does appear that they are really concerned about providing quality education to all at a very cheap cost. It is a sad irony that soon after the publication of the **National Policy on Education—1986** document, the so called public schools in Delhi and all other big cities have increased their school fees so much so that almost every public school in Delhi is now charging something like Rs. 250 or even more as tuition fee for a K.G. class student. The government has not at all bothered to control it. The government has also not cared to improve the quality of its educational institutions. Even in the Central Schools the quality of education is now fast deteriorating. The primary schools still have not benefited much from the much publicised operation blackboard.

Almost all aided schools and private schools exploit their teachers by paying them less in reality, although they pay them by cheque. The government knows it well, and yet it does not take over these schools. The overall resentment in teachers at all levels in regard to the government's dispensation of salary scales to them is bound to show its bad effect on the quality of education imparted in the educational institutions.

The policy makers have not bothered to strengthen and expand the schemes of Common school, compensatory education, and integrated education, and also they have not really bothered about improving the quality of education of the average school and average college. Their priority is on elite new institutions, the Navodaya Vidyalayas, but not on the stoppage of mismanagement of aided schools and improvement of the internal conditions of government schools, aided schools, municipal schools which are attended by the vast majority of our lower and lower middle class families comprising different kinds of disadvantaged groups.

Nothing has been done in reality by this New Policy to ensure equality of success to all students. Rural schools continue to receive less facilities than urban schools; schools in posh colonies continue to receive greater facilities than those in poorer localities; boys' schools continue to receive less facilities than girls' schools. This traditional picture in terms of provision of facilities itself has not changed; there is no indication in the New Policy document to cry a halt to this trend. The talk of spreading vocational education and making it accessible to the disadvantaged groups in substantial measure is all glib; where are the funds? Only a marginal increase in the number of such institutions will not make any difference. Already we know that only elites among the SC and ST and minority communities are able to capture all opportunities while the poor persons in these categories are not able to compete and get these facilities which are basically meant for them. It is also known to all that many high caste and upper class students are able to grab these opportunities in vocational, technical and professional institutions by production of false certificates of caste and income. The government has not committed itself to prescribe national standards for providing educational facilities in all educational institutions. Therefore, there is no hope that institutions located in unfavourable environments shall ever really become better.

The policy makers have not bothered to change the very model of education or teaching in the country. They seem to be either quite unmindful of it or blindly. convinced with the existing Banking model of education which provides slogan-mongering type of second or third hand education divorced from the realities of our societal context. Ours is in fact an oppressed society, and all our so called disadvantaged groups of people (who number more than two-thirds of our total population) have been and are still victims of great economic, social, cultural and political exploitation. What we immediately need is "Paulo Friere's **Conscientization Model of education**[18], so that our oppressed groups of people can be stirred up in their conscience through a realistic education about their socio-economic and cultural plight and they may be compelled to stand to fight for their own salvation in this very earthly existence of their's.

Our policy-makers seem to be saying all good things, assuring us to provide so many things like a big brother, trying to appease everybody, but in reality they seem to be one with the elites, capitalists, upper castes, and upper and middle classes. They are basically elitistic bureaucrats; they are not really bothered to ensure equality of success to every citizen, they merely harp upon providing equal opportunities knowing well that "there may be a slip between the cup and the lip."

As a sociologist of education having no political leanings or biases, I am of the considered opinion that since the New Policy does not seek to change the existing model of education, does not prescribe national standards for educational institutions throughout the country uniformly, does not really wish to ensure equality of success to every citizen, does not commit itself to eradicate corruption rampant in schools and colleges, does not seek to deal with its teachers honestly, graciously and in a dignified manner and does not give any indication of its having benefited from the key ideas and research findings on the equality of educational opportunity, the nation should not expect much out of the hollow promises made by the New Policy on Education. It may be an excellent draft by an educational bureacracy in league with the politicians, who really do not wish to change things in our country basically. Of course, some more educational facilities will be thinly spread all over the country in the coming years, but if any one expects that the real lot of the disadvantaged groups or the masses of the country will be radically changed or improved with the help of this new policy af education, I think he will soon realise that he has been living in the fool's paradise. Simply by fire-fighting operations, or by opening pace-setting schools or putting up show-pieces, the big challenge of the equalization of educational opportunity in India cannot be squarely faced. ☐

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New Education Policy

Examination Reform and the Evaluation Process

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Going through the twin documents, *"Challenge of Education: A Policy Perspective"* and *"National Policy of Education : Programme of Action"* which form the major enunciations on the new educational policy of the Government of India, two things stand out. First, a genuine concern and desire of the Government to use education as a medium to enable our multitudes to take a quantum leap into the twentyfirst century for effectively dealing with the challenges posed by unforeseen situations, new technologies and rising expectations. Second, a sense of despondency and helplessness among the planners at their inability to change our gigantic educational system in time for the 21st century. Among the areas which contribute to the latter feelings, mention can be made of the prevailing system of evaluation and examinations. According to the experts, the new educational policy may remain a non-starter until fundamental changes are introduced in the system of evaluation and examination to "resurrect" the entire educational system.

In the present paper, an attempt has been made to appraise the domain of examination reform and the evaluation process as dealt within the two documents on the new educational policy and to highlight some limitations in the different action strategies offered for bringing improvement in evaluation system and examinations.

At the outset, it should be made clear that this is not for the first time that our examination system has come under heavy fire. What surprises one on the other hand, is the consistency with which all commissions, committees and reports have highlighted the need for improving the system of evaluation and examination in the country during the last over one hundred years and our inability to do the needful all these years. And yet, at no time during these decades, there have been any doubts in the minds of experts, teachers, students and public at large that examinations are a necessary evil, that they dictate the theory and practice of education at all levels, and that, there may be protests, criticism, debates, suggestions, guidelines, committees, documents, reports and policies to effect ways and means for examination reform but examinations shall survive as Achille's heel of our educational system.

Need for Reform

The question that comes to mind is : "What are the reasons that despite years of sustained, scathing attacks, numerous suggestions and detailed blue prints for improving the system of evaluation and examinations in our country, we have failed in our goal ?" But before this, it is equally important to know why should we think of changing our evaluation and examination system on "priority" basis

The document *"Challenge of Education : A Policy Perspective"* is a valuable document in the sense that it contains a very objective and incisive criticism of the evaluation process and system of examinations as prevalent today in the country.

According to the experts who framed the report, the entire evaluation process needs overhauling because "…..preponderant majority come out of the institutions of higher education, perhaps with more of book learning and degrees, but with very little capacity for self-study, poor language and communication skills, a highly limited world view and hardly any sense of social or national responsibility." Low retention and high dropout rates (which are residual effects of examinations) continue to erode gains from the educational expansion. Teaching and studying in the college and universities is degraded to no more than "a part time occupation aimed essentially at the award of degrees which have least credibility and value." It has been aptly observed that :

> "…..the examination system...decides not only the fate of the students but also the content, orientation as well as the quality of education at all levels. Apart from evaluating examinees on the basis of rote learning and memorising, their annual periodicity creates an environment in which students tend to while away the time for most part of the year and gear themselves to work for the last three or four months...lack of continuity in application

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results in building up of unbearable pressures at the end of the year which find expression in bycott of the examinations, leakage of question papers and mass copying, payment of bribes to evaluators and other unethical practices. Consequently, degrees and grades do not generally command credibility as a whole with the public as well as employers in the public as well as private sectors, and the whole process of higher education has become warped, disoriented and dysfunctional producing a large number of unemployable young men and women."

Regarding the impact of examinations, the document notes that the character of examinations determines the curricular content and methodologies of education and also circumscribes the attitude of students; examinations are "unconcerned with the evaluation of the total personality, attitudes and values, ...are unable to contribute to the mental development and physical dexterity of the students." Poor quality of courses, large number of failures and dropouts with even larger number of third divisioners among graduates who fill the employment registers are some other adverse effects of the existing examination system. These have contributed to the loss of efficiency of the system of education in the country. The helplessness of the planners can be summarised in the following extract from the document :

> "......it appears self-evident that the present system of annual examinations will have to be modified since these, more than any other factor, have contributed to the deterioration in the quality. A stage has been reached when neither those who conduct examinations nor those responsible for teaching and management are scandalised by the very poor grades and pass percentage in the examinations. This is largely because the curricula as well as the evaluation system are out of tune, not only with the teaching methods and time disposition in the learning process, but also with the attitudes, limitations and potentials of students."

Stumbling Blocks

There are some brilliant observations in the document "*Challenge of Education*" regarding why efforts in the past have not yielded the desired results and what could be the repercussions and implications of effecting modifications in the existing system of examinations and evaluation. Commenting upon the need to resort to continuous evaluation, the report attributes the failure of examination reforms to the resistance from the teachers and the students. "Teachers", observe the report, "oppose it because the periodical evaluation envisaged would force them to work much harder and the students oppose it, not merely because they do not trust the objectivity of all the teachers but also because this would mean working the year round to maintain a reasonable level of performance." In addition to the above, "progressive centralization and bureaucratization and non-enforcement of discipline, standards and norms" seem to be responsible for the things to go away. Citing these to be the "crucial constraints", the document observes :

> "......In the Indian system, decision making, administration and implementation and more particularly the management of change are characterised generally by lack of entrepreneurship and excessive emphasis on hierarchical status. These are compounded further by the rigidity of approach, insularity of departmental structures as well as lack of detailed planning, unwillingness to experiment, suspicion of science and new ideas, and ritualistic adherence to the procedural rules and regulations."

The document also notes that in the event of changing the examination system, "a lot of people will resent it ..... This will mean much more correction of answer books, regular class work and innovative teaching involving considerable preparation"; the system of private tuitions will collapse and coaching shops will be rendered unnecessary. Those who benefit from paper leakage, publication of keys and guides, mass copying and other malpractices would suffer losses. This would also imply that the "immunity from accountability" which teachers derive today from an "impersonal system of supervision and evaluation" would be revoked. Even institutions to which the students throng because of social prestige and employment potential on account of the value attached to their degrees might lose them if jobs were delinked from degrees as a result of change in the evaluation scheme.

Suggested Programme

Realising that the assessment of performance should be integrated with the process of learning and teaching and the process of evaluation should be utilised to bring about qualitative improvement in education, both short term and long term measures have been proposed in the *Programme of Education*. The short term and long term measures at college and university levels, include continuous institutional evaluation in some experimental universities at the postgraduation stage; indicating student performance in terms of letter grades provision for improvement in the conduct of examinations through effective decentralisation, and modifications in the recruitment procedures respectively.

In the field of "conduct" of examinations, the programme calls for introducing legislation and providing penal measures for various malpractices connected with examinations and related offences; innovations and experimentation to avoid copying and unfair means in the examination halls. Among the long term measures envisaged to integrate the process of evaluation with teaching and learning at the university level, mention can be made of developing alternate systems of evaluation in place of external examinations for affiliated colleges; entrusting examinations to some universities which could function only as examining bodies; instituting suitable academic reforms like flexibility in the combination of courses, offering modular structures of courses, providing for accumulation of grades; evolving new evaluation procedures; and establishing an agency for continuous research and development in evaluation procedures.

Among general measures for effecting examination reforms, the "*Programme of Action*" suggests granting of inalienable rights to examinees to get their answer scripts scrutinised and compared with others; adoption of system of declaration of results in terms of grades in different subjects separately; provision for improvement of grades/marks in subsequent attempts; clearance of examinations in parts; scaling of marks in subjects not at par with each other; development of question banks; organisation of intensive training programmes for paper setters; marking of papers according to a pre-determined marking scheme; experimentation with open book examination and diagnostic evaluation; showing the results of institutional evaluation and external examinations separately in the certificates; showing the performance of candidates in non-scholastic aspects along with academic achievement in institutional certificates; entrusting the task of evaluation to teachers who "actually teach", devising of remedial programmes for weaker sections in the light of diagnosis of weaknesses and deficiencies; and, maintenance of students' records in institutions to facilitate continuous evaluation. Finally, in order to organise the tests at national level on voluntary basis so that norms can be evolved for comparing the performance and also for conducting independent tests, it has been proposed to establish a National Testing Service.

A Critique

While it goes to the credit of the policy planners that they have made lot many recommendations and suggested a number of steps for improving the system of evaluation and examinations in our country in the sphere of higher education, yet the proposed programme of action does not seem to be time bound and practical. It is also not linked with other suggestions to revamp education. Anybody connected with the movement of examination reforms in the country during the last two or three decades can easily discern that the recommendations are nothing more than the clubbing of the different suggestions made from time to time for examination reforms into the programme of action. Further, many suggestions have been made without ascertaining their empirical underpinnings and effectiveness. The programme of action is further an amalgam of impractical and abstract ideas which makes it difficult to discriminate between what has been attempted in the field of examination reform in the country with success; what can be attempted with effort and what should not be attempted. Also, it appears that those who framed the "*Programme of Action*" has little time to go through what they had penned down in the "*Challenge of Education*" with the result that many issues related to the examination system especially to the solution of genuine difficulties and problems in effecting examination reform have not been given due weightage while formulating the programme of action. It would, therefore, be appropriate to take up the different action strategies and programmes suggested in the document and to offer some remarks and comments on these with a view to highlighting their limitations and implications.

(1) The recommendation for resorting to continuous institutional evaluation raises several issues. Is continuous institutional evaluation synonymous with internal assessment? If so, to what extent it can succeed is easy to predict. Why should it be experimented at the postgraduate stage and that too only in a few universities? What weightage would be assigned to it and how would comparability and confidence in this system be incorporated? What safeguards would be needed to ensure that this system is not misutilised and abused by both the teachers and the students. Which academic and non-academic aspects shall be evaluated through institutional evaluation techniques and, would these also be externally evaluated? What about its periodicity and monitoring procedures? Would the system work in institutions with limited or large student population and in all areas near and far? In the light of frustrating experiences with the system of internal evaluation in the colleges and universities in India, it would have been better if adequate try out and experimentation would have preceded this recommendation and a definite framework provided as a model.

(2) Theoretically, direct grading has many advan-

tages over marking. However, in the light of the very limited success of this technique since 1974, when it was advocated by the UGC, it can be asked whether this practice has taken root in the college and university environments; whether teaching community have, by and large, taken to letter grading without marking; and whether, all subjects have effectively been covered under this practice. Further, distinction needs to be made between criterion referenced grading system (questionwise) and direct overall grading.

(3) To allow students to improve their divisions in subsequent examinations may appear to be a great privilege for the large number of students. However, in practice, it has several unseemly implications. In the light of delinking of jobs from the degrees and the ever increasing number of third divisioners, by allowing students to improve their divisions, are we not increasing wastage and perpetuating examinations as essential evils especially when the degrees would not have much value. The programme is silent about the criteria to determine genuine cases to whom this facility should be provided. What to do with those who fail to improve ?

(4) There seem to be contradictions in the concept of decentralisation of evaluation process and creation of additional agencies to conduct examinations. It is not clear whether such agencies are to share the heavy task of conducting examinations and declaring results with the existing universities or act as independent agencies at large costs since much expenditure would have to be incurred in creating additional infrastructures and making necessary recruitment etc. Also, if the objective behind the proposed reforms is to make the process of evaluation and examinations simpler, speedier and internal—to be handled by the teachers themselves, creation of more agencies would be a hurdle in the direction. This is especially so when the screening function of the university examinations is proposed to be diluted (for the purposes of employment) and traditional marking is to be done away with; when divisions are to be eliminated and when marks obtained in the different subjects are to be shown separately. This would further complicate the issues concerning the comparability of relative performances, maintenance of standards and equivalence of papers set by evaluators.

(5) As far as the conduct of examinations is concerned, it can be said that much needs to be done to make the evaluation process and examinations free from fear, anxiety and interferences. However, it is also funny, nay ironic, that those who are to examine students should be forced to do so at the cost of their lives and personal security. Enactment of legislation is an apparent attempt to provide a deterrent for those who indulge in malpractices. It is, however, an open question whether legislation will help in this direction. By what time would legislation take effect? What type of new law enforcing machinery would have to be set up? Would it not lead to bigger, better planned and careful "malpractices"? Would it not ultimately give rise to frequent and lengthy battles, bottlenecks, delays and creation of more bureaucratic set ups? Would it really enhance the efficiency of the system as a whole? What is the guarantee that this arrangement would cure us of the ills of examinations? Would the teachers and students tolerate this arrangement which infringes the innate "autonomy" and "freedom" (to do what they like)?

(6) It is strange that when it came to suggesting ways and means to curb masscopying through innovations and new strategies, the planners could cite only one method, that of changing the serial number of questions in papers printed in different colours. Once the rabbit is out of the bag, students will surely see through the trick. One wishes that some recommendations could have been given after considering the questions—why could copying on a mass scale not be controlled or curbed till now despite several suggestions in this regard put forward from time to time? Would copying as a malpractice continue even after degrees lose their employment potential and social prestige? Which situations give rise to or encourage masscopying and whether such situations have been provided for in the new system of education and evaluation?

(7) Among the long term measures, the *Programme of Action* recommends the development and implementation of "alternative systems" of evaluation in place of external examinations. However, no alternatives have been suggested or specified for reasons best known to the planners. With so much prestige, value and fear associated with the traditional external examinations, what would be the status, nature, credibility, comparability and acceptance of the would be alternatives? Further, will old practices continue side by side? What about the criteria in terms of which alternatives shall be evaluated and validated? Are centres of higher education, teachers and students "ready" and "oriented" to implement alternatives? Mere platitudes will not lead us anywhere.

(8) The recommendations regarding setting up of a separate and specialised agency for "continuous research and development" falls in line with the current fashion among the expert committees and panels to

uggest creation of new organisations devoted to the olution of problems pertaining to a particular area. This can be viewed as a clever strategy on the part of cademicians to shift the responsibility of suggesting xamination reform and new evaluation techniques to he new agency rather than sharing the concern for a Herculean problem which has always been a persistent nd significant hurdle in the way of educational improvement. Unless improvement in assessment procedures and examination reforms are initiated at the grassroot level among and through the actual practitioners of higher education, the possibility of any ideas or innovations from another agency to succeed are likely to be remote. Further, no time limit has been proposed for the new agency to start its activities. This suggests that the task of research and development may not gather momentum till the proposed agency can get going. Another example of myopic planning.

(9) The practice of declaring results in terms of marks/grades in each subjects separately may reduce the peril associated with pronouncing judgements on the candidates by classifying them into "fit" and "unfit" categories as also the number of failures. On the other hand, this shifts the responsibility of decision making to such employers as may not be competent to shift the personnel required for different jobs from records of examination merely containing marks in several subjects. With a general paucity of reliable and valid recruitment and admission tests, lack of trained people who can make adequate use of the same and the inability of the proposed National Testing Service to cover the large number of eligible youth, confusion and indecision are likely to prevail for quite sometime. No time framework has been suggested to effect this change.

(10) Question Banks prepared for assisting evaluators and students may not be of much help since the dons, in general, consider it below their dignity to consult these booklets. The students, on the other hand, are known to restrict their studies to the confines of the question banks throwing textbooks and supplementary readers to winds. The unscrupulous reap the harvest by marketing keys, help books and guides. In other words, "answer banks" assume more importance, Question banks, where ever available, have largely been prepared in a hurry, badly edited and sloppily printed, are not made available in time, are seldom revised, and, are never accompanied by indicators of item difficulty, item discrimination and dispersion of marks. Further, the size of the tryout samples is seldom revealed.

(11) One can understand the rationale behind the recommendation regarding the issuing of separate certificates showing the results of the institutional evaluation and external examination. But what purposes would this serve is not very clear. If the right of evaluation is to be transferred to those who teach, the above distinction is simply redundant. However, if the institutional evaluation does not duplicate the areas which are to be externally evaluated, many aspects of individual's personality and behaviour can be assessed. This calls for a consensus on what needs to be evaluated, how, and how often, and whether this would be a part of "summative" or "formative" evaluation. Further, would this record be open to scrutiny and comparison, re-evaluation and improvement ? Who and how many would evaluate the students ? What measures shall be taken to reach agreement among raters ? These and allied details needed to be worked out.

(12) Maintenance of students' records at the institutional level and organisation of training programmes for college and university teachers to train them for using new methodologies, methods for setting question papers and taking measurement of performance are good suggestions. However, it is open to question how far shall these steps succeed among the college and university teachers who are well known for their reluctance to take additional work load, "lack of awareness, lack of will to change, vested interests, lack of courage to innovate and experiment."

(13) The National Testing Service to be developed as a quality control mechanism to organise nationwide tests on voluntary basis so that norms can be evolved for comparability of performance and also for conducting independent tests is a Concept transplanted in our educational environment from abroad. The success of the proposed agency in the Indian social settings is highly doubtful. Not only would the agency fail to cover all States and very large number of candidates effectively without sacrificing quality, it might have to go the same way as the National Open University. Soon there would be regional testing services followed by several state level testing agencies, increased expenditure, interference and non-performance. To what extent would this agency fulfil its promise is still to be seen and believed.

Conclusion

To conclude, we can sympathise with the planners for their desire to have the problems of evaluation and examinations solved swiftly. However, the programme of action offered by them falls short of our expectations. Realizing fully well that the teachers and the centres of higher education in the country have reached today, a dangerous and challenging time when conditions, concepts and practices concerning examinations are in disarray, what we wanted was a new map, new bearings and a new conceptualization to overhaul and streamline our evaluation machinery and not a set of suggestions indicative of tinkering and patching and professional twists to some measurement concepts here and there.

Going through the "*Programme of Action*" one feels that our planners forgot to plan their actions on the clear messages and experiences from the past: that policies and programmes succeed only if those who put them into practice are thoroughly convinced about the outcomes of their efforts, when the programmes are conceived realistically on the principles of flexibility, economy, uniformity and urgency and implemented sincerely from the top to the grass level workers; when the programmes are objectively monitored, modified and coordinated; when accountability procedures are built in the very structure of the programmes so that the praise and blame can be given objectively; when frustrations and failures along with the achievements are admitted and candidly discussed and shared; when all those for whom programmes are aimed are involve in the programme from the beginning to an end. Ho one wishes these aspects could have been attended t in the formulation of action strategies in preference t the half baked programmes offered in the Document.

Could we do something concrete in this directio even now to breathe a new life in our sterile educatio system by making students and teachers the master rather than the slaves of examinations ? ☐

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University to be a University

(Continued from page 5)

The other aspect of research—oriented, or applied or mission or problem centred research—is essentially outside the university's purview. Here a distinction should be made between the Arts and Science universities and the Professional universities—the engineering, agricultural and medical universities. In the case of Arts and Science universities, the major stress is on fundamental research, which as earlier suggested should be adequately funded and promoted. In the case of Professional universities, in addition to basic research, they also have to undertake applied research—in cooperation with the user—the industries, the public works and irrigation departments, the farmers, the hospitals etc. There is one area of fruitful cooperation between the university and the user—which we have not adequately developed in India. There is need for the university, the industry, and the government to join in certain research areas which have been described as the thrust areas—drinking water, oil seeds, literacy etc. Here the Arts and Science university can contribute the necessary social science or basic science input, the Professional university or the research agency the applied research input, the industry the framework of needs and monitoring its conformity to the needs, and the government the resources, in order to push forward relevant applied research.

In the research area—whether it be basic research or applied research—it is important that what is attempted is within the technical, personnel and financial means of the university. And universities in their turn should not take on more responsibility for research, sponsored by the government, its funding agencies or from non-Indian sources—which are beyond its technical means. The absence of such restraint leads to the dilution of standards, irrelevance and mediocrity, as referred to earlier. ☐

New Education Policy and Vocationalization of Education

S. P. Patel*

Vocationalization of education has been considered a major instrument for the transformation of the educational system in India which has come up for a good deal of criticism on account of its lack of purpose, irrelevance and predominantly bookish character. Such an education produces youth who have little skill or competence for entering the world of work and, therefore, either swell the ranks of the unemployed or create a scramble for admission to universities.

Historical Landmarks

Highly satisfied with the academic character of education in the country, various commissions and committees on education have from time recommended the diversification of courses at the secondary stage by introducing vocational courses of a wide variety in consonance with diverse aptitudes, abilities and inclinations of students. In the post-independence era, Radhakrishnan Commission (1948) and the Mudaliar Commission (1952) made very strong recommendations in this direction. It was at the recommendations of the Mudaliar Commission that a number of multipurpose schools providing diverse streams of education were started all over the country.

The Kothari Commission (1964-66), however, was the most noteworthy for its recommendations of a national pattern of education and the introduction of vocationalization as a major tool for national development and increase in productivity. The Commission was of the view that vocationalization should serve as a powerful instrument for the transformation of the educational system and recommended that in addition to the academic stream of education, a vocational stream with a variety of courses from different areas should be started and about half the number of students desiring higher secondary education should be diverted to it so as to prevent the mad rush for universities. The vocational courses were to be terminal in nature, but they could also lead to higher education after adequate experience of actual work had been acquired by students. Such courses were intended to train skilled manpower needed to manage the crucial middle level jobs for which there is huge demand but little supply.

The National Policy of Education Resolution (1968) accepted the recommendations of the Kothari Commission and the National Council of Educational Research and Training (NCERT) was thereafter entrusted with the task of preparing curricula for vocational courses and helping the States in the implementation of vocational education.

In the wake of the acceptance of the recommendations of the Kothari Commission, programmes for the vocationalization of higher secondary education in the 10+2 pattern of school education were initiated in the year 1976 by some States. Some most important aims of the programme were :

Aims of Vocationalisation

(1) To reduce the excessive and wasteful pressure on university education by diverting a sizeable number of students at the +2 stage to vocational courses.

(2) To increase the employability of youth and to develop their capacity for self-employment.

(3) To correct the mismatch between the supply and demand of labour by training youth for middle level jobs for which there is huge demand but little supply.

(4) To ensure a steady flow of skilled workers in existing and emerging areas by developing necessary occupational competence.

(5) To link education with productivity thereby ensuring increased production of goods and services for raising the standard of living of the people.

(6) To promote the economic development of the country by supplying well trained workers to manage diverse jobs in diverse fields.

(7) To accelerate rural development by training manpower for those vocations which have the potential for better utilization of agricultural resources.

(8) To ensure optimum development of human resources by training youth for work in accordance with their aptitudes and interests.

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Progress of Vocationalization

From 1976 upto the New Education Policy (1986), eleven States and four Union Territories viz. Andhra Pradesh, Assam, Gujarat, Haryana, Karnataka, Kerala, Maharashtra, Sikkim, Tamil Nadu, Uttar Pradesh, West Bengal, Goa, Andaman and Nicobar Islands, Chandigarh, Delhi and Pondicherry had introduced vocational courses in varying degrees. Some 120 vocational courses in six vocational areas namely, Agriculture, Technology, Commerce, Home Science, Para-Medical and Social Sciences has been introduced. The total intake capacity in vocational courses was about 72,000 while the total number of institutions offering them was 1900. The management of vocational courses was in the hands of different agencies in different States, such as, the Boards of Technical Education/Secondary Education/Higher Secondary Education/Intermediate Education or the departments of education which were discharging administrative or academic responsibilities or a combination of both. In some States, recognition had been given to the certificates of vocational courses by appropriate agencies and recruitment rules had been revised to enable the vocational pass-outs to get jobs in the organised sector. Also, a certain percentage of seats had been reserved in some States for the admission of vocational pass-outs in universities and institutions of professional education.

On the academic front, the NCERT had prepared competency-based curricula for about 60 vocational courses, developed instructional materials for many of these courses, organized a number of training programmes for vocational teachers and orientation courses for key educational personnel in the States, organized national conferences and seminars on the subject and carried out evaluation studies of the implementation of vocational education in various States. However, the NCERT could only inspire the States and give such academic help as they required, but the initiative for vocationalisation lay with the States only.

Factors for Slow Progress

Although vocationalization of education was visualised as a major reform of the educational system in the education policy adopted in 1968, its progress remained dismal with only 2.5 per cent enrolment in vocational courses throughout the country instead of the target of 50% set by the Kothari Commission. A number of factors were responsible for this sorry state of affairs. Vocationalization was a centrally sponsored scheme during the Vth Plan, but was withdrawn as per the decision of the National Development Council i 1979. Lack of adequate funds with the State Governments for vocationalization which is much more costly than general education due to its requirements of laboratories and workshops, equipment and materials small classes, specialist teachers, on-the-job training etc., was a very important factor which hampered its satisfactory progress. Absence of reliable estimates of manpower needs, difficulty of obtaining the services of properly qualified teachers, dearth of suitable instructional materials, insufficient opportunities for on-the-job and apprenticeship training, lack of opportunities for professional advancement of vocational pass outs, lack of sufficient opportunities for their gainful employment and very low popularity of the scheme of vocational education among the public at large were some other glaring stumbling blocks in the way of vocationalization. While the factors contributing to the unsatisfactory progress of the vocationalization programme were thus many, the single most important factor was the unequalness of the existing organisational structure to the magnitude and complexity of the task and its consequent inability to plan and implement programmes of vocational education as per the accepted policies. It was thus paradoxical that while lack of skilled manpower at the middle level was a major obstacle to the raising of productivity and economic growth, implementation of vocationalization was handicapped from the very inception of the programme.

Kulandaiswamy Report

The Government of India took serious note of the tardy implementation of the policy of vocationalization, the importance of which had been emphasised time and again by various committees. With a view to accelerating the progress of vocationalization and revitalising it so that it can meet the massive challenge of unemployment on the one hand and reduce the overcrowding in higher education on the other, the Government of India appointed a Working Group headed by Dr. V. C. Kulandaiswamy in 1985. The Working Group was called upon to formulate the concept of vocationalization at different levels, recommend the nature of courses and linkages among different agencies, and prepare an action plan for the promotion of vocationalisation in the country. The group submitted its recommendations on all these points and urged the Union Government to come forward in a big way to support the programme of vocationalization in the country. Besides being responsible for policy making, coordination and standardisation, development of curriculum guidelines and view and evaluation of the programme, it should ovide full financial assistance for the achievement of e stipulated targets.

ew Education Policy and Vocationalization of ducation

Coming close on the heels of the Kulandaiswamy eport, the New Education Policy (NEP) 1986 xpressed deep concern at the very slow progress of ocationalization and underlined the imperative need or taking urgent steps to strengthen the vocational ducation system in the country. Fully realizing the ignificance of vocationalization of education for the ell-being and prosperity of the country, the NEP has ssigned a very high priority to it and set the targets f coverage of 10% of all higher secondary students in ocational courses by 1990 and 25% by 1995. The mportant statements/recommendations of the NEP in espect of vocationalization of education are reproduced below in the language of the NEP itself. The se of words like 'systematic, well planned and rigorously implemented', 'crucial', etc. indicates that the programme has been invested with a good deal of mportance.

New Education Policy Recommendations

(1) The introduction of systematic, well-planned and rigorously implemented programmes of vocational education is crucial in the proposed educational reorganisation. These elements are meant to enhance individual employability, reduce the mismatch between the demand and supply of skilled manpower, and provide an alternative for those pursuing higher education without particular interest or purpose.

(2) Vocational education will be a distinct stream, intended to prepare students for identified occupations spanning several areas of activity. These courses will ordinarily be provided after the secondary stage, but keeping the scheme flexible, they may also be made available after Class VIII. In the interests of integrating vocational education better with their facilities, the Industrial Training Institutes will also conform to the larger vocational pattern.

(3) Health planning and health service management should optimally interlock with the education and training of appropriate categories of health manpower through health related vocational courses. Efforts will be made to devise similar vocational courses based on agriculture, marketing, social services etc. An emphasis in vocational education will also be on development of attitudes, knowledge and skills for entrepreneurship and self-employment.

(4) The establishment of vocational courses or institutions will be the responsibility of the Government as well as employers in the public and private sectors; the Government will, however, take special steps to cater to the needs of women, rural and tribal students and the deprived sections of society. Appropriate programmes will also be started for the handicapped.

(5) Graduates of vocational courses will be given opportunities, under predetermined conditions, for professional growth, career improvement and lateral entry into courses of general, technical and professional education through appropriate bridge courses.

(6) Tertiary level courses will be organised for the young who graduate from the higher secondary courses of the academic stream and may also require vocational courses.

(7) It is proposed that vocational courses cover 10 per cent of higher secondary students by 1990 and 25 per cent by 1995. Steps will be taken to see that a substantial majority of the products of vocational courses are employed or become self-employed. Review of the courses offered would be regularly undertaken. Government will also review its recruitment policy to encourage diversification at the secondary level.

Besides the above, the policy stipulated special steps for catering to the needs of women, deprived sections and rural and tribal students and need-based, flexible, non-formal vocational programmes for neo-literates, school dropouts, unemployed, partially or fully employed people.

In order to ensure effective implementation of the NPE including the vocationalization of education in a time-bound manner, the Government has incorporated detailed measures for the realisation of its targets in the Programme of Action (POA) which was formulated subsequent to the NPE. The POA has accepted for its basis the recommendations of the Kulandaiswamy Report which has very comprehensively dealt with all important aspects and implications of vocationalization. Some significant programmes and specific actions which the POA has outlined are :

Significant Programmes for School Education

(*a*) *At the Elementary & Secondary Stages*

Socially Useful Productive Work (SUPW)/Work

Experience (WE) to serve as a base for vocationalisation. More specifically :

1. SUPW/WE to form an integral part of the curriculum at all stages of school education from primary upto Higher Secondary (academic stream).

2. SUPW/WE to develop confidence and sufficient psychomotor skills at the middle school stage to enable students to enter the world of work directly or through certain occupational training courses.

3. SUPW/WE programmes at the secondary stage to be viewed as a linear extension of those for the middle stage and expected to enable the students to opt for vocational programmes at the +2 stage with better appreciation and undertaking. Also to ensure modest preparation of school leavers to enable them to choose an occupation.

(*b*) *At the Higher Secondary Stage*

1. Vocational courses at the higher secondary stage to be regarded not as a preparation for college, but as a period for preparing an increasingly large number of school leavers for different vocations in life. Expansion of the regular vocational education programmes in terms of opening more institutions and introduction of new vocational areas to take place for coverage of 10% higher secondary students by 1990 and 25% by 1995.

2. Programmes at +2 level to be formulated by SCERTs/SIVEs in the light of guidelines laid down by the NCERT. Programmes to be launched in selected schools in a phased manner on the basis of results of area vocational surveys.

3. More opportunities in engineering and technology to be provided 100 more vocational institutions to be established for this purpose.

4. Entrepreneurship/self-employment skills to be developed through curriculum, special training programmes and apprenticeship facilities. Career guidance cells to be set up at district level.

5. Stipends to be provided to 70% students of vocational courses to undergo paid apprenticeship in industry.

6. Bridge/transfer courses to be developed for facilitating mobility between and among vocational and general education courses.

7. Recruitment rules to be changed to facilitate employment of vocational passouts in suitable occupations in the organised sector.

8. Involvement of public/private sector industry to be secured in vocational education through appropriate rewards/incentives.

9. A phased and coordinated pro gramme for t training of teachers, principals and key officials vocational education to be undertaken. Crash pr grammes for the training of teachers also to organised.

10. A phased programme for the development textbooks and other instructional materials for vario vocational courses to be organised.

11. Schemes for the utilisation of communi resources i.e. workshops, part time teachers, trainin facilities in industry to be initiated.

12. Linkages to be established between variou institutions concerned with vacational education a the national, regional, state and district levels.

13. Arrangements to be made for systematic mon toring and evaluation of the programme.

14. Above all, an appropriate organisationa structure to be developed for carrying out differen functions for the introduction and implementation c the programme of vocationalization viz., plannin and coordination; setting of standards; administratio of the programme; research, development and teache training; and monitoring and evaluation. New bodies agencies such as a Joint Council for Vocationa Education (JCVE), State Councils for Vocationa Education (SCVEs)/State Institutes of Vocationa Education (SIVEs), Central Institute of Vocationa Education (CIVE), District Institutes of Vocationa Training (DIVTs) to be created. Existing institution such as the NCERT, SCERTs, Teacher Training Institutes (TTIs), Regional Colleges of Education (RCEs and Regional Apprenticeship Boards to be strengthened.

It may be seen from the foregoing account that nothing has been left out from the purview of necessary actions for vocationalization of education at the Higher Secondary stage in the NEP or POA which may threaten to stand in the way of proper implemeatation of vocationalization. Given the political will and financial resources equal to the magnitude of the task, a well-planned, systematic and rigorously implemented programme of vocationalization is indeed possible which can lead to the attainment of the stipulated aims viz. enhancing individual employability, reducing the mismatch between the demand and supply of skilled manpower and providing an alternative for those pursuing higher education without interest or purpose. Let us hope that large sums of money needed for the programme will be found somehow and the programme put on ground in a most imaginative realistic and effective mrnner thereby achieving the lofty goals of transformation of the ucational system, its linking with productivity and tional development.

) At the Tertiary Stage

1. Vocational Education at the higher secondary age has important implications for the university age. The POA has very eloquently articulated the eed for university level vocational courses arising out f 'feeder courses' at the higher secondary stage. ccording to the POA, the reform at the +2 stage in ne form of vocationalization would necessarily have s impact on the +3 stage of higher education. 'When substantial number of students opt for the vocational tream, the degree courses in universities cannot ontinue to be the extension of academic stream only'. he reason for introducing vocational courses at the niversity stage is to offer worthwhile opportunities or the professional growth and career advancement of ocational passouts so that there is greater vertical mobility for them and greater acceptability of vocational education.

2. POA states : "The current prejudice against vocational education will not disappear unless a reasonable chance of worthwhile employment or an advantage in moving upwards into a professional or general programme of education is provided to the students of vocational courses at the secondary level". At present, opportunities for further education for students of vocational stream in +2 stage are almost non-existent. Hence suitable strategies should be evolved for providing opportunities for the vocational products to enter appropriate tertiary level programmes.

3. The POA further states : 'Tertiary level Diploma programmes in vocational subjects, Advanced Diploma Programmes, and Degree Programmes will be introduced in selected polytechnics, affiliated colleges and universities, as well as in special institutes set up for this purpose. The Joint Council for Vocational Education (JCVE) and the State Councils for Vocational Education (SCVES) shall develop schemes for creating such tertiary level vocational education facilities at non-university institutions. For the university level courses, the universities will develop model curricula in collaboration with NCERT/CIVE for starting programmes in vocation educational at university departments and affiliated colleges.

4. The NPE has also recommended the institution of vocational programmes at the university level for students passing out of the academic stream in addition to those arising from the feeder vocational courses at the +2 stage.

However, while for the development and implementation of vocationalization programme at the higher secondary stage, the POA has suggested an elaborate management system, and a series of actions which, if properly executed, will result in the intended outcomes, it has remained silent on these very points in respect of university education. It may be so because the Kulandaiswamy Report which has formed the basis of various recommendations on vocationalization in the NEP has only indicated the types of vocational courses which can be instituted at the university level, but not worked out a detailed mechanism for implementing vocationalization at the university stage. Details of university level vocational courses mentioned in the Kulandaiswamy Report are given below :

Diploma Programmes

The students of the vocational stream of the higher secondary school system may seek advanced training or want to obtain a diploma for their professional growth in the chosen area of specialization. Opportunities for further education of candidates from the vocational stream in +2, are to be created both by introducing new courses in existing institutions and by creating new facilities. In a number of vocational areas, a two-year diploma course followed by one year apprenticeship can be introduced. The existing polytechnics which enjoy considerable social prestige and market demand may allow the students of +2 vocational stream to enter the second year in corresponding courses of study or admit these candidates to specially designed two-year diploma courses. New courses may also be instituted to provide upward mobility for higher secondary vocational students.

Degree Programmes

1. The university system should remain alert to the innovations and reforms being brought about at the levels of education that qualify for admission to degree programmes, respond to the developments and design courses that will take into account new programmes and vocational courses at the +2 level so that the candidates from the certificate level courses and from the vocational stream may be offered opportunities for a degree programme in the relevant subject field.

2. A new system of Community Colleges or Collegos

of Appropriate Technology can be ushered in to advantage and their certificated/diploma/degree programmes may be offered under the umbrella of existing universities Existing higher secondary vocational schools of promise or junior colleges may be elevated to this status so as to keep the cost of such a development down to a minimum.

3. The U.G.C. has offered a conceptual model which allows for one Vocational elective out of the three in the first degree courses. These should be open to all higher secondary students, both academic and vocational. As experience accumulates, the number of vocational electives may be increased. This will offer opportunities for acquiring greater competence by the products of the higher secondary vocational stream.

4. A few of the universities have also introduced in a very limited way degree courses with emphasis on job orientation. As examples may be cited the Bachelor's Degree Courses in corporate secretaryship, Tourism, Book Publishing, etc. Similar courses may be instituted in accordance with identified occupational needs and requirements of the vocational courses at the +2 stage. Candidates from certificate level courses and from the vocational stream may be offered opportunities for a degree programme in the relevant subject field.

General Degree Programmes for Vocational Students

1. There are many degree courses in social sciences, humanities, home science and commerce in nearly all universities which offer ready entry to higher secondary products of the vocational stream. This provision should be continued in future and also extended.

2. When diversification is introduced at any stage of education, a candidate may like to move into a different stream for a higher level of education. In order to facilitate the chage over from the vocational stream to the general stream and vice-versa, bridge courses must be specified and made available either in colleges or preferably in the higher secondary schools.

3. In addition, modular programmes for job-oriented bridge courses may be adopted and credit system may be introduced to facilitate mobility and bring about considerable flexibility in the system.

Universities and the Vocationalization of Education

1. The University Grants Commission (UGC) and the Association of Indian Universities (AIU) may consider the New Education Policy statements, the programme of action suggested for their implementation and the types of courses recommended in the Kulandaiswamy Report and work out a viable programm of vocationalization at the university stage. However as pointed out earlier, the report has not worked ou details of the programme and its implementation Hence the first and foremost task before the UGC an the AIU should be to evolve a mechanism includin the appointment of a Committee or Group for work ing out important details of the vocationalizatio programme at the university level viz. identificatio of need based vocational courses, targets for differen types of courses, administrative structure for thei management, criteria for the selection of courses an institutions, needed infrastructural facilities, development of curriculum and instructional materials, practical and on-the-job training, teacher selection, deployment and training, preparation of bridge/transfe courses, changes in admission and recruitment rules requirements and sources of finance, monitoring an evaluation of the programme and so on. Association of school level vocational agencies such as the proposed JCVE, CIVE, NCERT, SCERTs, TTIs an other concerned agencies must be secured in thi important task. The UGC should set up prope structures and linkages at its own level and at the leve of universities for providing important inputs for the vocationalization programme and for its coordination, monitoring and evaluation.

2. Through a viable and effective programme o vocational education at the university level, the universities can well promote the cause of vocational education at the +2 level by providing the much needed channel for the professional growth and career advancement of vocational passouts. Vocational education at the university stage can serve anothe very important purpose too. By offering vocational courses for the students of the academic stream, it can make university education more relevant, purposeful, interesting, rewarding and socially useful. Need based vocational courses at the university stage can go a long way not only in fulfilling the rising expectations of the Indian people by increasing their employment opportunities and earnings, but also by accelerating socio-economic development in the country throug the provision of scientifically trained manpower in vital areas. In short, they can significantly help in meeting the NEP objectives of reducing the mismatch between demand and supply of manpower and providing an alternative for those pursuing university education with the sole objective of earning a degre which very often does not lead to employment. Abov all. they can raise the productivity of vocationally trained manpower and accelerate the process o national development. □

National Education Policy and Library Development

C. P. Vashishth*

Introduction

There is a growing awareness now, than before, of the importance of library service in learning, scholarship, advancement of knowledge and problem solving. Also, there is increasing recognition of the fact that information is an essential input to the development process in industry, agriculture, service and administration, and that libraries as resource centres of knowledge and information provide vital support in decision making in every sphere of human activity. The role of library in supporting higher education has assumed greater importance and a new dimension in the context of National Educational Policy 1986. The Indian constitution envisages a just equitable and fraternal society, which would assure the dignity of the individual and the unity and integrity of the nation. Our policy planners are unanimous in their approach and feel that while economic strength and vitality determines the scope and equality of political freedom, for millions the availing of the benefits of freedom depends on its being accompanied by an equitable distribution of goods and services. This is possible through expansion, dispersal and diversification of employment, which in turn implies equality of opportunity, particularly in the access to and acquisition of knowledge and skills which in turn are gained through education. Despite these seemingly favourable pronouncements of our policy framers, the libraries in general do not seem to get due attention, required facilities and necessary inputs in order to be well organised in their layout and efficient in their services. The National Adult Education Programme inaugurated by the Government of India in 1978, for example, did not have any money earmarked under library head out of a huge outlay of Rs. 600 crores.

Growth and Development of University Libraries

In a period of four decades we have made appreciable progress in establishing new university libraries and strengthening the old ones. In 1927, for example, we had only 15 university libraries for a total student population of 91,000 each catering to the needs of approximately 6,000 readers. By 1951 we had 28 university libraries, excluding those of Pakistan, for about 1,00,000 students taking care of about 6666 students on an average. In 1985 the number of university level libraries stood at 155 to cater to the needs of 82,00,000 students raising the average number of readers to 20,645 in each university with still less resources to serve. At the current rate, we will have about 200 university libraries to serve a student population of 50,00,000 lakhs raising the average number of student members to 40,000 in each university library by the turn of 21st century. With such a large number to cater to, how can one think of providing quality service to its clientele. In our keenness to carry out massive operations and to achieve quick results our libraries have not been very particular to devote proper attention to aspects like productivity on the one hand and quality on the other. These lacunas have come to the fore now and are attributed as factors responsible for decline in standards in comparison to international librarianship. What is worst is that the people who sit at the helm of affairs compare our library services with those of most advanced nations of the West who have all the resources at their disposal and are never allowed to starve for want of space, equipment, gadgets, new tools and reading material. They are given a free hand to go in for new technology. The staff working in libraries enjoy a respectable position in the organization and also in the society. Here, in India, when it comes to granting o.k. to the developmental plans, the proposals fall on deaf ears.

Problems

Most of the university library buildings which came up in 1950s are running short of space and the University Grants Commission (UGC) is sitting umoved to the extension proposals of the university/college libraries. Same is the position of staff in colleges. Though the annual intake of books has tripled, the sanctioned staff continues to be the same as that in 1960s. The recommendations of the Khandala seminar sponsored by the UGC have not seen the light of the day even after 10 years. A PhD thesis done in a US University blames "administrative authorities, including state governments, vice-chancellors, principals and the UGC for the poor image, services, collec-

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tions and poor facilities in Indian academic libraries"[1] The University Libraries of our recent past are badly suffering for want of funds. One time centres of excellent collection, these libraries are withering as all foreign grants have ceased and the UGC is not able to provide even the per capita grant-in-aid suggested by its own committees and commissions established from time to time. With the result that the collections built up are becoming outdated ultimately resulting in low use of libraries. The "quality of libraries on an average, is not of any good standard".[2] The "Impact on users is not any great"[3], because "actual delivery of service does not get the emphasis that is necessary"[4]. These shortcomings result in a poor image of libraries and the library profession. A concerted effort is needed to get over these distortions and establish credibility so as to earn recognition and command the lost respect from the user community.

To some extent the image of libraries can be salvaged by the professional librarians. It is our confirmed belief that quality in library can only be brought by quality personnel. The government and other funding agencies should give due consideration to the opinions expressed by the members of the profession from various forums. At the same time librarians too need to improve their performance, bring excellence in their functioning and add an element of quality in service. They have to constantly review their methods, techniques, procedures, standards, norms, services and products to meet the new demands which are being raised because of changed situation and environment.[5] The 'Operation Black Board' as envisaged under the New Education Policy has a message for all of us. Our traditional system and services will have to be overhauled to fit in the scheme of new things and automation introduced in various library operations, in phases. Proper mechanism will have to be developed to get the feedback from the user community so as to effect necessary changes in the policy frame of acquisition, processing, repackaging, organization, storage, retrieval and dissemination of information. While on the one hand, we find that our older libraries are suffering from the serious cuts in grants made by the UGC, we witness colossal waste of money on the other. 'Regional Libraries' are being set up at far off distant places without keeping in view the user population around. Instead of opening a 'Regional Library' in a place like Garhwal it would have been better if the grants for the existing University Library in the city could be enhanced. Still better could be the philosophy of resource sharing.

Close to university/college libraries. school library development in our country is an area which requires maximum support and attention. We believe that reading habit is formed at a young age and that school library is the best place to promote it. Unfortunately our school libraries are a neglected lot. Most of our schools do not have a library worth the name. If at all there are any, they are more an apology than anything useful and meaningful. Only a handful of schools have a worthwhile library. To some extent this situation is due to the fact that the importance of school libraries in the educational system is not realised by the educational administrators and school managers and there is no explicit commitment to provide adequate library facilities to school children. Librarians of these institutions are never given a free hand to work full time in libraries. Often, they are asked to take absentee classes and to attend to such office work as may be assigned to by the principals. These librarians mostly work single handed and the libraries remain locked as and when the librarians proceed on leave. Much was expected from the New Education Policy in the matter of school libraries, but the document is totally disappointing as no justice has been done to libraries.

Resource Sharing

Resource Sharing in its most positive aspects entails reciprocity, implying a partnership in which each member has something useful to contribute and is willing and able to make available material or services, when needed.

It is often said that inflation and budget reductions are the primary forces that lead to resource sharing in libraries. But these are not the forces that make resource sharing work : they are only pressures that force consideration of the problem and the opportunities. The only approach that permits resource sharing to work is to have resources to share, a willingness to share them, and plan for accomplishing resource sharing, or else this is an empty concept since help cannot be provided when needed[6].

The major hurdle in resource sharing is the multiplicity of authorities managing the libraries. Each one has a feeling of possessiveness and does not let others make use of resources even when they are lying unused. In view of the fact that there is no public library network in the country, it would be worthwhile to delink the libraries of the academic institutions from their parent organizations and throw the resources of these libraries open to public at large who want to do a serious reading. Additional manpower could be sanctioned to run these libraries beyond the normal working hours of university/college/schools and necessary finances provided. This will not only engage the unemployed educated youth but also help in achieving the goals as laid down in the New Education Policy which aims at vocationalization of education on the one hand and universalization of elementary education on the other.

No studies have so far been attempted to measure and indicate the idle capacity of university/college/school libraries. Almost all colleges/schools running morning and evening shifts have two separate libraries with separate budgetary provision for staff, books and other reading material, Both the libraries, under the same roof, subscribe to same newspapers and journals and invest a huge amount on the procurement of costly sets of encyclopaedias and other publications of reference nature. This colossal waste of tax payers' money could very well be avoided by having a single library for both the shifts. There seems to be no explicit logic behind the subscription of newspapers and acquisition of costly reference material in duplicate under the same roof. What we need is the creation of a "Library Grid" to take care of library and information needs of all, be they members of university/college/school or public. The proposed Library Grid could be formed by delinking the libraries attached to various educational institutions. This will not only provide an opportunity to make judicious use of idle capacity of these libraries but also continue to feed and support the academic needs of people even after they have completed their formal education pursuits.

Conclusion

From the foregoing description it can be seen that the state of school libraries which are the doorways to higher education, is not at all satisfactory. The condition of libraries attached to colleges and universities is no better with regard to basic ingredients that are necessary to make them function as effective units of the universities offering proper support to their teaching and research activity. In the present context of steep rise in price of books and subscription rates of journals, it will be impossible even in a situation where the authorities adopt a very enlightened and liberal library policy, to find adequate finances for the proper development of libraries. Therefore, a solution to this problem has to be found in the introduction and practice of various methods of library cooperation such as resource sharing and networking. A strategy for the spread of literacy and improvement in the quality of education is unthinkable in the absence of well stocked and ably managed libraries. The provision of library facilities in the society will provide dynamism to the programmes for family welfare, energy conservation, prevention of deforestation, health care, immunisation, etc, besides expanding the base for democracy[7]. ☐

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Five Areas of Concern in Educational Policy and Planning

(Continued from Page 8)

It is sad that the warning given by the Education Commission in 1966 was permitted to go unheeded:

> "The existence of the vast masses of non-literate people in our country, which prides itself on its noble traditions of learning, is humiliating . . . An effort commensurate with the magnitude of the task of eradication of illiteracy is inconceivable unless there is a clear conviction on the part of the national leadership that the education of the masses of non-literates has a direct bearing on economic and social progress and on the quality of national life . . . We think that the problem must be faced resolutely, and realistically, and we are convinced that indifference to it will not remain unpunished" (Report of the Education Commission, Page 781).

The idea of placing before the nation a new and comprehensive policy for education had much in its favour. However, the lessons that should have been drawn from the poor response to the proposals of the Education Commission and the Policy Resolution of 1968—poor response both at the level of the Central Government and State Governments and the causes that lay behind it—deserved more critical attention during the discussions which have taken place since August 1985. The years lost have now to be made good. With the passage of months and years, Plans and Policy Resolutions have a way of losing their sense of urgency. Hopefully, this will not be allowed to happen with the National Policy on Education-1986. ☐

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dult Education, NPE 1986 and the Universities

S.C. Bhatia*

ntroduction

The National Policy on Education (NPE) 1986 romises to charter new paths in educational reforms n India in tune with the goals envisaged in our pri- ary document of people's aspirations—the Constitu- on of India. Among other aspects of Educational olicy, Adult Education does figure prominently. Vhat measure of priority does it find in the NPE and he programmes developed therefrom? How does the olicy represent an advance over the earlier ones? Iow does the envisaged programme relate to and is n advance over the earlier programmes? What vas the nature of the role which was specifically ssigned to the universities in the earlier policies and rogrammes and what roles have been specifically isualized for the universities in the NPE 1986?

These questions need to be analyzed in a diachro- ic framework of time on the bases of policy documents issued at different points of time, programme documents, and, studies/experiences of implementa- ion of programmes. It would be difficult to analyze policy and programme documents pertaining to such ational efforts as Community Development Programme, Social Education Programme, Maharashtra Gram Shiksham Mohim, Farmers Functional Literacy Programme, and other programmes of Adult Education prior to 1978 in view of the paucity of space as also the archival nature of these documents. However, there are important documents available in the post-1978 period specifically pertaining to the National Adult Education Programme (NAEP), Integrated Child Development Services (ICDS) [with its compo- nent called the Functional Literacy for Adult Women (FLAW)], the Adult Education Programme (AEP) modified in the context of the Kothari Review Commi- ttee Report, the Mass Programme for Functional Literacy, and, the National Literacy Mission (NLM) as one of the five technological missions. The specific choice of the post-1978 period has been made by the present author in the context of its relevance to the university scene. University involvement in programmes of Adult Education as a concrete activity of national development under its third function known as "Extension" assumed a certain magnitude only during this period. It may be stated here for purposes of record that 93 universities and more than 2500 colleges are currently involved in the Adult Education Programme.

Pre-1978 Phase

Experiences in the implementation of the pre-1978 Adult Education programmes indicate that efforts were undertaken on a small scale based on a moderate infrastructure and technical support services; the learner response to these programmes tended to be good since they came to the Social Education Centres or Gram Shiksham Mohim or FFL Centres largely on account of their own volition. The Social Education Centres provided learners an opportunity to link up their efforts with formal certification processes in School Education. The present author had an opportunity to teach in one of the Social Education Centres wherein learners would continue to come for two to three years with a view to getting certificate of Class V level. The Social Education Programme provided an integrated set of educational experiences in so far as a typical centre comprised of literacy, awareness meetings, and recreational facilities including indoor games, reading room facilities.

The Maharashtra Gram Shiksham Mohim provided some very good results on account of village level planning, goal setting and management processes. However, lack of support services for post-literacy efforts tended to prove a stumbling block in the continued use of literacy by the learners. The results from the Farmer's Functional Literacy efforts tended to be generally encouraging on account of the functional nature of the literacy programme and combined use of media alongside.

Post-1978 Phase

The National Adult Education Programme(NAEP) was formulated at a scale and an ideology which gave

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it the promise of being a revolutionary programme seeking to galvanise people's participation through all forms of organisational networks close to the people. In the final analysis, the NAEP permitted involvement of State departments, voluntary agencies and universities keeping out all other organisations with religious and political background. The 1980-81 figures relating to the extent of involvement of institutions/agencies revealed greater conservatism on the part of the State; the State departments accounted for nearly 75 per cent of the programme, voluntary organisations for 21 per cent of the programme and universities for only 4 per cent of the programme. The NAEP did succeed in helping in the setting up of State level infrastructure and technical support services. It also offered an opportunity to the universities to concretize Extension as the third yet equivalent function of institutions of higher education by visualizing involvement of students and teachers in the eradication of illiteracy.

The AEP limbered its way through till 1983 when it received a fresh lease of vitality with its inclusion as Point No. 16 in the New 20-Point programme. Many of the voluntary organisations had by then folded up their work in this sector of national development discouraged by a long drawn review of their work. The number of centres being run by universities and colleges started rapidly declining on account of severe problems in financial management at the level of the University Grants Commission (UGC), problems in setting up infrastructure in 92 universities and 2,500 colleges, and problems in providing technical support services.

The enthusiasm of Principals, teachers and students and a very warm response from the community of adult learners have been the outstanding features of university/college involvement in the Adult Education Programme. A large number of students participating in the Adult Education Programme (both in terms of providing instructional support and in creating an appropriate motivational climate for learning) happened to be first generation learners themselves coming from homes which have greater proximity of ethos to poverty and deprivation. It is for the first time that institutions of higher education undertook an effort which was part of the poor man's millieu, an exercise in abstract codified knowledge being blended with the harsh social realities. The Government of India sought to enhance the extent of such student involvement in efforts aimed at eradication of illiteracy through a complementary Mass Programme of Functional Literacy (MPFL). As against the total involvement of 25,000 students as instructors in the Adu Education Centres and approximately 2,50,000 st dents providing motivational support to this wor the MPFL sought to involve 2,00,000 students fro the cadres of National Service Scheme (NSS) a 1,00,000 from the Non-NSS categories of stude population. Never before in the history of high education in India has one seen a situation where nearly 6,00,000 students (17 per cent of the tot enrolment in the sector of higher education) had chance to be directly and indirectly involved in t national effort of eradication of illiteracy. If o views this extent of student involvement as a part the total effort of the State sector and the volunta sector (which is eight times of the Universities pr gramme), we should have been rapidly moving towar the achievement of the national goal of covering total number of 8 crore adults by 1990.

The ICDS with its FLAW Component would ha similarly contributed significantly had the programn managers demonstrated a will to sustain it on t large scale on which it was launched. It was the fir major national effort to propagate adult literacy f women with a functional orientation. However, t programme planners readily surrendered to monito ing returns and evaluation reports which revealed lo returns for FLAW as compared to other componer of the scheme. Instead of initiating remedial measu aimed at upgrading the functionaries' performance FLAW through training and better management a in linking educational aspects more closely with t inputs delivery with other aspects of the ICDS, t programme managers gave in to the programme ev luators. The component called FLAW was dropp to retain better accountability returns of the oth components. A large scale programme like ICI could not probably suffer a negative image on accou of a component which belonged more to the the Ministry of Education than to the then Ministry Social Welfare in the Government of India. Sor amends have now been made with the introduction a separate programme called Women's Integrate Lifelong Training (WILT). The NPE 1986 spells o a component called Functional Literacy of Wom (FLOW) as an integrated part of ICDS.

There have been in evidence definite problems setting up the infrastructure, providing technical su port services, and management of an education response to the varying expectations of the learne The form of infrastructure, of technical support se vices, and of management of learning situations has be local (village-based/tribe-based/slum-based) aracter in the large and diverse socio-cultural con-xts of India. The forms of organisation, the iden-fication of technical support resources and the sponse of the adult learners have to be locally sualized, rather than centrally prescribed.

But then we have chosen to rely excessively on ntralized planning both for development policies and rogrammes. It is only from one plan to another nat we are beginning to recognize hierarchically ower levels (State, District, Block, Village) at the olicy planning and programme management levels. n such a system of development programme planning, ll one can do is to examine whether the NPE-1986 isualizes the Adult Education Programme as a mea-ure of continuity through further expansion of nterpersonal involvement for reaching out to the arge and diverse groups of illiterates, through deve-opment-linked instructional programmes, or, spells ut a new learning management response to tackle the iganic magnitude of illiteracy.

NPE 1986

The Adult Education Programme as visualized in he NPE 1986 needs to be seen through stages in volution of national thought, stages which are clearly represented by such documents as the "Challenge of Education", the "Draft NPE 1986", the "NPE 1986", the "Task Forces", the "Programme of Action", and, the draft document on "National Literacy Mission". Fortunately, most of these documents, except the reports of numerous "Task Forces", are available for study and analysis.

The "Challenge of Education" viewed the element of participation by various groups in the process of policy formulation as a central point. The "Challenge" document stated :

> "...Experience of conducting adult education programmes for the last three decades and its evaluation, by independent agencies, has revealed that want of sufficient motivation prevents illiterates from continuous participation in adult education programme. There is no support to the programme from developmental agencies and the involvement of grassroot voluntary agencies and educational institutions has remained marginal. Literacy has not been used and propagated as an instrument of development because the positive nexus between poverty and illiteracy has not been recognised. There is no evidence that the decisionmakers recognize that appropriately fashioned Adult Education Programmes could serve as effective instruments for converting the country's population from being a drag on development into an engine of development; or that adult education programmes could contribute specifically and significantly to increase in productivity....the adult education can only be sustained on the strength of a positive conviction that there is a correlation between literacy and social, economic or political development" (pp 41-42).

The "Challenge" document pointed to a possible impact of the Adult Education Programme on universalization of elementary education"...an adult literacy level of 70 per cent is the critical threshold for universalization of elementary education. Illiterate parents are prone to avoid enrolling their children and also take them out if it means any inconvenience to them" (pp 42-43).

The "Draft NPE 1986" highlighted the need for "continuous upgradation of skills", participation in developmental programmes, linkages of Adult Education Programme with alleviation of poverty, national integration, environmental conservation, energisation of the cultural creativity of the people, observance of small family norm, promotion of women's equality, etc. It advocated various ways and channels for the implementation of the programme of adult and continuing education (currently known as "Jana Shikshana Nilayams"), workers' education, post-secondary education institutions, mass media, creation of learners' groups and organisations programmes of distance learning, need, and interest-based vocational training programmes, etc. The "NPE 1986" retained the comprehensive view of adult education taken in the "Draft NPE 1986" which placed adult and continuing education as critical to the participation of the adult learner in the process of national development through a variety of learning networks and organizational networks.

The "Programme of Action", describing the management strategies for the implementation of these development-oriented concepts, laid stress on the following :

(i) reorganisation of the existing programmes to introduce flexibility and other measures for greater effectiveness;
(ii) application of science and technology, and pedagogical research for improving the pace and environment of learning;
(iii) establishing linkage between adult education and the developmental programmes;

(iv) launching of mass functional literacy programmes;

(v) programme of continuing education as the instrument for moving towards a learning society;

(vi) creation of dynamic management structures; and

(vii) a slant in favour of women's equality.

A welcome feature of the NPE 1986, specifically in the context of Adult Education, is the significant emphasis being placed on establishing linkages with other development programmes such as IRDP, NREP, SC/ST development programmes, labour welfare programmes in terms of striving to make education an integral part of social and economic development.

Universities, Colleges and NLM

The NPE 1986 visualizes involvement of college youth and teachers, among others, in Mass Functional Literacy Programmes by making literacy work as "study service", as part of work experience and social/national service which would be reflected in the students' final result sheets. It speaks of "substantial institutional incentives" for eradication of illiteracy in a well-defined area.

Continuing Education is another area which would be of direct interest to universities and colleges "as a strategy of human resource development and of the goal of creation of a learning society". The Policy stipulates establishment of Jana Shikshan Nilayams (JSN) for clusters of villages the total population of which may be about 5,000. The JSNs are proposed to be housed in the school buildings, Panchayat ghar, etc., and would provide library and reading room facilities, charcha mandal, cultural activities, etc. Universities and Colleges are expected to give to extension work the same importance as they do to instruction. The courses would include mass education as well as systematic efforts in continuing education for the work force and the professionals.

The third area of direct interest to universities and colleges is the resolve to strengthen technical and pedagogic resource support including use of educational technology for quality improvement. This would include preparatoin of learning materials, teachers' guides, and training. The NPE 1986 assigns this work predominantly to State Resource Centres and proposes the creation of District Resource Units as parts of the District Institutes of Education and Training (DIET).

The fourth area of interest in Adult Education t universities and colleges is the view of eradication c illiteracy as a Technical and Societal Mission. Th process of acquisition of literacy skills is sought to b made "quicker and easier". The National Literac Mission envisages greater intervention of better hardware and software support to the learning situation a also the results of pedagogic research and greater us of media.

The fifth area relates to the visualization of management system and its "guiding considerations" The "*Programme of Action*" underscores the need for "centralized policy framework and direction: an "decentralisation of the planning and implementatio process and functional autonomy." It accords a plac of critical centrality to the Project approach whic would operate on the advice of a committee of representatives of the functionaries, local community, people organisations and officials of the concerned developmen departments. The management plan has gone upward from the district level to central level with corresponding authority structures. Subsequent developments i the Policy implementation process have revealed tha the Government proposes to set up a National Authority and a National Institute, State Commission and State Institute, and a District Board and a Distric Institute.

Some Points for Consideration

How do universities/colleges perceive their role i these five areas? Have their perceptions found plac either in the policy formulation processes or programm formulation processes? Does the formulated programme known as the National Literacy Mission represent a measure of sensitivity to the patterns of growt of "Extension" as the third yet equally important function of higher education? Has the NLM projected th most desirable choice of strategies for the objective o viewing Adult Education (or, is it still 'literacy'?) as "societal mission"? These questions need to be analyzed in detail.

The NLM document has turned out to be an infrastructure-dominated document in so far it visualize setting up infrastructures at the National (Adult Education Authority and Institute of Adult Education), Stat (Commission on Adult Education and Institute of Adul Education) and the District (Board of Adult Educatio and a District Resource Unit in the District Institut of Education and Training) levels. It is a "societa mission" in so far the society shall have these infrastructures. How much of these are a pre-requisite f the growth of Adult Education of society has probably not been viewed as an important aspect of programme planning. Could we not have saved resources for more societal strategies by utilizing existing physical, manpower and technocratic resources for skills upgradation programmes of the small workforce with desired literacy and numeracy inputs? It would have been more meaningful if the NLM had interacted with universities to identify existing Departments of Education, of Adult, Continuing Education and Extension, and, of Vocational and Technical Education, as State level resource units. and some good colleges as District level resource units. It seems that there is a marked communication gap between the framers of the National Literacy Mission and the university community.

An important programme like the one incorporated in the National Literacy Mission cannot afford to ignore the vital contribution that a diverse group of 36 lakh strong youth in universities and colleges can make towards the achievement of its objectives. And this diverse group could work with multiple modalities—as centre organisers, as facilitators of motivational climate, as Mass Programme Volunteers etc. Nor can the NLM afford to overlook the possible contribution from more than 2 lakh teachers and the physical and technocratic infrastructure of more than 140 universities and 5500 colleges. Could these have not impelled us towards economies in infrastructural budgeting and additional resources for mass organisation of learners?

We have instead been led to believe that there needs to be achieved some clarity in our thinking on the uniform, rather than heterogeneous nature of incentives to be given to university/college students. We are being told that there is an element of incongruity in providing monetary incentives (Rs. 100/- per month) to students who undertake to run an Adult Education Centre of 15 to 30 learners and in seeking voluntary work from the students who undertake as part of the Mass Programme of Functional Literacy imparting literacy skills to 1 or 2 illiterate adults. The Department of Education in the Ministry of Human Resource Development would instead like to offer institutional incentives (of block grants/awards/subsidies) for doing outstanding work in this field.

Any excessive emphasis this functionary-oriented question tends to divert from the basic conceptual question which the University Adult Education Departments would like to analyze. What are the objectives of Adult Education as a societal mission? What are appropriate management choices to achieve these objectives? The functionary question is a part of the management choices. In terms of objectives, the NLM is a very progressive document since it views literacy as linked with development, as an instrument intended to encourage people's participation in the process of seeking development justice. However, in terms of management choices, it is limited to the creation of an administrative and technical infrastructure for literacy; it disposes of the question of development-orientation of literacy to terms such as "coordination" and "linkages." Even in its commitment to create a technical infrastructure for literacy, it tends to ignore the management principle of optimisation of use of existing institutional resources particularly in a country where resource constraint in education is a perennial problem. The existing resource structure in universities and colleges of India in terms of buildings, laboratories and libraries, students and teachers, and software capabilities is grossly underutilized. The NLM could have easily formed out to these institutions a part of such functions as continuing education, technical resource support, management system including information system, and, research. Do such situations of developmental extravagance arise from a very low social estimation of universities and college resources? It is a question which requires analysis not just in the context of the Adult Education Programme but in relation to the entire ideational and programme framework of the NPE 1986.

The utilization of students and teachers needs to be seen in the context of the slowly-growing acceptance of "extension" as the third yet equally important function of higher education. The National Service Scheme has been in existence for nearly 16 years now; its estimated enrolment is 6 lakhs (20 per cent of the total student population in institutions of higher education) out of which 2 lakhs have been involved in MPFL. The Adult Education Programme is 9-years old in the university/college sector and has a recorded involvement of 25,000 students as instructors, 2,50,000 students aiding in the envirnonment building process, and 1,00,000 students in the MPFL. Against this figure of 5,75,000 students engaged in extension activities in one form or the other, one has to rationalize its performance ratio; some experts have suggested that it varies between 50 to 60 per cent.

It would thus be seen that the process of involving students in extension programmes is still very slow; it is at the moment of the order of 9 to 12 per cent in terms of performance. Given the additive nature of efforts initiated in institutions of higher education in augmenting the involvement of the students in extension programmes, it is doubtful as to whether we are as yet ready to force decisions on the question of "work study" or "study service" for each student. The functionary catchment base for a mass societal mission like Adult Education would receive better and more lasting acceptance if the additive strategy (as against the regulatory strategy inherent in the notions of "work study" or " study service") is continued to be adopted. One need not see monetary payment as "individual incentive" to youth; there is another way of looking at it in terms of dignity of labour among the youth. A very large percentage of student instructors are invariably first generation learners, coming from a socio-economic background which has a high measure of empathy for poverty and deprivation; a token wage for an honest eight-to-eighteen hours' work a week need not be seen as an incongruity.

The NLM document does not represent adequate sensitivity to the gradually evolving approach in extension programmes in institutions of higher education. A large number of national development concerns are being responded to in terms of extension education programmes, including Adult Education, Continuing Education, Population Education, Equality of Status for Women, National Integration, Drug Abuse Education, Legal Literacy, etc. The varied nature of these programmes has helped in widening the catchment area of student involvement. These educational responses are a part of the wider semantic being attributed to "Adult Education" by the University/College Community; "Adult Education" must become a "human rights" issue, not just a literacy issue.

The University Grants Commission have very rightly responded to such a wider semantic by adopting an Area Development Approach for its extension programmes as a measure of its concern for involving an ever-increasing number of students in community education programmes. The extension educators in the universities and colleges would like to find greater support for this effort within the programme thrusts enunciated in the NLM. The dialogue has, in fact, been long overdue.

There is thus need to experiment with multiple approaches in mass education programmes; infrastructures created with limited ends in the field of education and development do not always represent the only right way to create a people's movement. In fact, infrastructures once created become a justifying force in themselves often leaving their objectives behind. The university college system have formed out Core Units out of their vast educational resources specifically with the objective of optimising use of existing resources to concretize the function of "extension". The NLM should support this experiment.

The Draft document of the National Literacy Mission also needs to be evaluated in the context of the problems that earlier evaluation studies had enumerated, and, the new strategies it outlines for making the programme more dynamic. The problems have been generally well known; poor quality of training, lack of credibility in the monitoring system, lack of adequate support from the mass media, lack of mass mobilization of learners and voluntary organisations, low levels of literacy achievement, absence of post-literacy and continuing education programme, etc.

What does the NLM propose to do in regard to these problems? It seeks to concentrate work in 107 areas with heavy bias of choice in favour of rural areas and women learners. It then seeks to concentrate on techno-pedagogic aspects motivation of learners and teachers, and mass mobilization processes by evolving an efficient management and monitoring system. It proposes to undertake technology demonstration in 40 districts for "development, transfer and application of techno-pedagogic inputs. The meaning of the term "technology demonstration" has thus been made internal to the learning process, rather than functional to the learner. It is a moot question whether the adult learner tends to feel less motivated in view of excessive emphasis in adult education on factors which are internal to the learning process or on account of a marked absence of technology as an instrument of upgrading skills or bargaining capacities in the work place. By laying an excessive emphasis on "pedagogic" rather than "technology" the NLM is likely to result in a long-drawn effort of setting up "pedagogic-process infrastructures" rather than "technology assimilation" as a process of improving work skills and wage levels. In a country where 80% of the work force is either "unskilled" or "semi-skilled", this excessive emphasis on "learning process" technology (or, is it merely teaching process technology?) at the cost of much-needed skill-inducing technology orientation and use of technology. Mass Adult Education needs to be freed from the skackles of formal pedagogy and related directly to the socio-economic problems of the people.

The NLM strategy and its consequent management systems are more likely to suit the interests of learning-teaching technocrats than the learners themselves. The strategy would obviously provide additional institutional infrastructures and respond to the urban crisis of educated unemployment rather than respond to the absence of a learner-oriented mass movement and a social and economic justice-oriented adult education. The NLM will place the pedagogue (or, is it the Andragouge?) firmly in saddle, who will then hopefully go about "educating" the adult learner. In the context of an overriding obsession with such terms as "staff development", staff selection "collection, flow and utilization of information", "monitoring" and "evaluation", the learner will probably emerge as somewhat incidental to the National Literacy Mission!

The choice of the strategy could have been otherwise as well. It could have favoured interpretation of the term "education" to "Human Resource Development", and evolved a management system which brings together all development education programmes in these 107 areas to make a coordinated coverage of their illiterate and unskilled population. Each development education sector has its own pedagogic inputs; a synchronised use of these inputs would have meant economy on the one hand and wider outreach on the other. The Jana Shikshan Nilayam (JSN) could have then been visualised in a more dynamic manner as the place and institution where various agencies concerned with human resource development and manpower development could have located their training programmes with adequate and relevant assimilation of literacy and numeracy inputs, of equity and justice inputs.

The fear that the NLM would reduce itself to a pedagogic mission is also based on the past experience which indicates that all proclamations relating to involvement of, coordination or linkages with sectors of development other than education would not see the realm of actualisation. The Department of Education would invariably end up doing its part without the concomitant political will to bind employees, trade unions, concerned agencies of the government for workers/employees, or, even an optional use of existing institutional resources for continuing vocational and technical education through the non-formal mode. The media will continue to be heavily dependent on entertainment rather than liberating nature of education since the socio-political processes would find it burdensome to face the situation of mass awakening. A state-run programme cannot after all be directly instrumental in promoting sentiments of liberation from injustice and speedier search for equity and justice.

Incidentally, the psychological orientations which seem to dominate the emphasis on "techno-pedagogic inputs" are somewhat the same as in the case of "Operation Blackboard" in case of universalization of elementary education. The clear message being "strengthen the infrastructure" for improving the results/returns! I am not suggesting any evaluative directions for the "operation black board" here though.

The "whizkids" of adult education seem to be eagerly awaiting to be designated as "Country Cousins" of "computer whizkids". The awesome prospect of entering the 21st Century has atleast been made less awesome by the learning technology answer. One can readily visualize tabletop PCs with policy planners and programme managers in Adult Education with MIS consultants doing the rounds of the "Sarkari" Bhawans. Lest this should sound as a tirade against the bureaucrats, there is a fair sprinkling of such words as "flexible", "autonomous" and "debureaucratisation". The Adult Education Centre organiser (instructor) and the Prerrak (super-visor) should not feel altogether left out since he has a vast infrastructure over him of District Board of Education and District Resource Unit in the District Institute of Education and Training, the State level Commission and the State Institute of Adult Education, the National Authority and the National Institute of Adult Education !

Next time around, we can always muster evaluation reports in support of more infrastructure. As for the outreach to the learners and facilitating organized behaviour among them maybe some other time ! □

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Sports and the New Education Policy

Ranjit Bhatia*

The past two decades have seen a major change the overall attitude to the sports sector. What not long ago, was considered a useful and integral part f the educative process in so many societies has overrown that role. Alongside education has undergone hanges leading to specialisation in virtually all disiplines, at a very early stage. The protagonists of cholarly pursuits and the experts on sporting activity ave gone their own ways; each attempting to catch p with the leaders in the respective fields. While his has not led to any problems in the more advanced ountries where the sports culture is an integral part f one's day to day existence, the Third World is xperiencing a very lopsided development wherein porting activity is straying away from academia. Nowhere has this phenomenon been more apparent than in the Indian context, where the competitive educational process has seen a steady decline in its association with sports.

The implementation of the 10 plus 2 scheme for the school leaving stream was probably a major turning point in this context. In an era of specialisation at an unreasonably early stage in one's life, school going youth are being pressed into deciding on their priorities for work and play, let alone their choice of subjects of study. Once they are through with the X Class examinations, they are virtually monitored into what might be termed limited pursuits. The struggle for scoring marks is ruthless enough, and it sets aside all thoughts on education in the best sense of word. The sports enthusiast would hence forth continue playing regularly only if he or she is good enough to make a top grade team; the girl who excelled as a gymnast at the junior age group stage is dissuaded from continuing her regular training lest it should adversely affect her marks in the examinations.

By the time the school leaver enters university, he has already been categorised as a capable student or an also ran; a scholar in the science stream, or an uncertain being in the humanities; a cricketer or a footballer devoid of any academic pretensions. At the other end of the scale we have the very unusual situation, both at school and college, where the teacher's responsibility ends in the classroom and the sports coach's role is confined to the playing grounds.

The teacher who spent his afternoons supervising or playing with the student outdoors not so long ago, is an anachronism in the situation as it exists today.

The New Education Policy, if it is to revitalise the Indian education system, would have to consider the relevance of sports as an integral part of the educative process, rather than to treat it as a separate activity. In our quest for success at national and international level we have tried to rush into a sports promotion policy with a gladiatorial approach. This implies provision of facilities for training and competition for elite teams. A handful of chosen sports people are taken out of the mainstream of student curriculum and provided incentives to play to win. This is a short term effort. While it may well enable the select few to improve their performance, it does a great deal of harm in the long run to their academic life. In the system as it exists today, teams are prepared for major fixtures at coaching camps. The full time student, involved in them, has to forego his studies, to travel to another city, and to be prepared to stay there for a long period. While it is not certain if this is the best way to train under specialists, it certainly makes a mockery of their time as regular students. This is one of the major reasons why many promising youngsters are unwilling to take competitive sports seriously. At the other end of the scale we have the case of teaching community that is not willing to accept the fact that anyone wanting to excel at a particular sport, has to spend long hours on the playing grounds and occasionally, to travel out. Any work missed in the academic curriculum during the process cannot be made up. We do not have the mechanism to enable such 'absentees' to catch up, let along do well in examinations. Just how difficult a situation young people have to face in the tussle between the educationist and sports officialdom is illustrated by the case of the 15 years old Zenia Ayrton. An outstanding sprinter, who has already bettered national junior level marks set by P.T. Usha, the Bombay based school girl's predicament lies in the fact that she wants to do equally well at studies. "I can come first in my class and also do serious Athletics", she says "but I get the feeling that none wants me to do that." A year ago when she was unable to attend a national coaching camp because of the proximity of school examinations, she had to give up throughts of running in national colours. It is the kind of situation that discourages keen students from getting into the sports culture.

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Sports for students then, can only be meaningful if it is allowed to blend with the daily routine of class work, library hours plus all activities that are likely to be of use in the academic and athletic sense.

When the national sports coaching scheme was first introduced in the Indian context in the 1950s, it was aimed not only at providing expert coaching to national squads, but also exposing school and college going youngsters to expert guidance. The first decade of its implementation saw a notable upsurge in sporting activity. Junior level sports seemed to thrive, and despite lack of stadia or sophisticated equipment, participation was very encouraging indeed. The coaches to whom responsibility of training students was given, were primarily teachers. They were fully familiar with their trainees curriculum. One went to play after classes, and not during studies. The calibre of sports people who emerged from the Raj Kumari Coaching Scheme was very promising indeed. Indians did not win Olympic titles, but were steadily moving towards a place on the victory rostrum. As numbers grew, there was a need for expansion of sports promotion schemes, and understandably, we needed a restructuring of the sports organisation at all levels While we have not completed the overhauling process, we have got carried away in our haste to our present predicament.

There is then, a desperate need today to bring back the culture of mass participation into the lives of the student populace. The school master has to learn to accept its uses, while the sports coach involved at the school level needs to be far more academically oriented than he appears to be today. Universities are primarily centres of higher education, and understandably priority must be given to academia. But this does not have to exclude regular participation in sports at the end of the day's work. For those of the undergraduates who are somewhat more athletic than others, there should be provision to excel without radically tampering with their academic ambitions. The system that provided education of the sort that produced an Arun Lal, a first class Economics Honours Graduate, a high calibre Test class Cricketer could not have been all wrong, and needs to belooked at thoroughly in the context of the New Education Policy.

In the ultimate anylysis sports in India need a filip somewhat different in nature to that it is currently experiencing. Its values cannot be imparted in isolation and to the benefit of a handful. Understanding of the ethos of sports participation can only come if it is to be accepted as part and parcel of one's academic and cultural values. The complexities of present day existence, for the impressionable student are eased through the sports syndrome. The enormous growth of sports as a world wide phenomenon cannot be ignored by any educational system. ☐

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ASSOCIATION OF INDIAN UNIVERSITIES

62nd Annual Meeting

Osmania University, Hyderabad

December 16-17, 1987

PROGRAMME

16 December, 1987		
3.00 P.M.	Opening of Book Exhibition by Mr. Justice P. Jagan Mohan Reddy, Former VC, Osmania University	Library Building
3.45 P.M.	Group Photograph	Tagore Auditorium
4.00 P.M.	Inauguration of AIU Annual Meeting Chief Guest Hon'ble Shri N.T. Rama Rao, Chief Minister of Andhra Pradesh	Tagore Auditorium
5.30 P.M.	ACU Preparatory Committee Meeting (For Members only)	Vice-Chancellor's Lodge
17 December, 1987		
9.00 A.M.	AIU General Session	ICSSR Hall, University Library
11.30 A.M.	General Session (Contd.)	ICSSR Hall, University Library
2.30 P.M.	AIU Business Session (For Members only)	ICSSR Hall, University Library
5.00 P.M.	Visit to Central Institute of English & Forein Languages	
7.00 P.M.	Cultural Programme	Indira Priyadarshini Hall

National Conference on Role of Universities in Implementation of New Education Policy

A Curtain Raiser

The National Conference on 'Role of Universities in Implementation of New Education Policy' is jointly sponsored by Osmania University and the Association of Indian Universities as a part of AIU's 62nd Annual Meeting and will be organised at Osmania University, Hyderabad on 18-19 December, 1987.

The New Education Policy (NEP) visualises the role of higher education as providing people with an opportunity to reflect on the critical social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills.

The role of universities is crucial in the matter since one of the important functions of universities and institutes of higher learning is to provide specialized scientific and technical skills, imparting of knowledge, contributing to every sector of national development and improving social conduct and behaviour, Thus, a major share of responsibilities, as envisaged in the NEP, rests with the universities and other educational institutions, It becomes imperative for the educational community to try to define some of the important issues involved in the management of higher education, the efficiency improvement, the financing of higher education, youth services and physical fitness programmes, education in human values, etc. in the light of the NEP recommendations.

Nearly 75 Vice-Chancellors, several Deans and Senior officials and teachers of universities are participating in this two-day Conference scheduled to be inaugurated on Dec. 18. The conference is split into five sessions, apart from the Inauguration and Valediction Sessions, First Session deals with such aspects of Management of Higher Education as 'Proposed National Apex Body', 'State Councils of Higher Education', Autonomous Colleges & Deptts'. and issues related to 'Consolidation & Expansion of Institutions'.

In the Second Session, factors concerning Improvement in Efficiency such as 'Restructuring of Courses', 'Research & Extension', 'Evaluation & Examinations' and 'Teacher Training' will be taken up.

The two sessions that follow on the second day, deal with New Strategies in Higher Education. In the third session on the second morning issues related to 'Distance Teaching Learning', 'Youth Services, Sports & Physical Fitness Programmes' & 'Evaluation & Accreditation of Institutions' will be discussed.

In the fourth session, issues related to 'Rural Universities', 'Education in Human Values' and the proposed 'National Testing Service' will be taken up.

For each session, there will be 4-5 keynote presentations to be followed by paper presentations. In all the sessions, sufficient time will be devoted for discussion and in the Plenary Session that follows, reports and recommendations from all the four sessions will be presented by the respective rapporteurs. The consolidated report and the final recommendations of the Conference will form the concluding part of the Plenary Session. Folders with printed copies of the keynote speakers and other papers for presentation will be made available to the participants at the time of registration on the first day. It is proposed to bring out the proceedings of this Conference as an AIU publication.

National Conference on Role of Universities in Implementation of New Education Policy

Hyderabad on 18-19 December, 1987

PROGRAMME

Friday, December 18, 1987

9.00 A.M. Registration Opens

10.00 A.M. INAUGURATION OF THE CONFERENCE

Chairman

Prof. G. Ram Reddy
President
Association of Indian Universities

Inaugural Address

Shri Anil Bordia, Secretary, Department of Education,
Ministry of Human Resource Development, Govt. of India

11.30 A.M. to 1.00 P.M.

SESSION I

MANAGEMENT OF HIGHER EDUCATION

a. Consolidation & Expansion of Institutions
b. Autonomous Colleges & Departments
c. National Apex Body & State Councils of Higher Education

Rapporteurs

1. Prof. K.S. Upadhyaya, Department of Economics, Osmania University.
2. Dr. (Mrs.) G. Bharathi, Department of Psychology, Osmania University.

Keynote Speakers

1. Dr. S.K. Khanna, Secretary, UGC/Prof. M.V. Mathur Former Director, NIEPA	Consolidation & Expansions of Institutions
2. Dr. R. Subbayan, VC, Bharathiar University	Autonomous Colleges & Departments
3. Prof. T. Navaneeth Rao, VC, Osmania University	Apex Body & State Councils of Higher Education

Papers

1. Prof. P.K. Sharma, Gauhati University	The Centrally Funded State Universities
2. Mr. M.T. Ghabe, K.J. Somaiya College, Bombay	Shift from Academic to Vocational
3. Dr. K. Soman, Calicut University	A Programme of Action for the Implementation of New Education Policy

2.00 P.M. to 4.30 A.M.

SESSION II

IMPROVEMENT IN EFFICIENCY

a. Teachers' Training
b. Restructuring of Courses
c. Research and Extension
d. Evaluation and Examinations

Chairman

Dr. Ramesh Mohan
Vice-Chancellor
Meerut University

Rapporteurs

1. Prof. S.M. Varaprasada Rao, Prof. of Geophysics, Osmania University
2. Dr. P. Maruthi Rao, Department of Business Management, Osmania University

Keynote Speakers

1. Dr. (Mrs.) J. K. Pillai, VC, Mothar Taresa University, Kodaikanal	Teacher Training
2. Dr. D. B. Desai, Centre of Advanced Study in Education, Baroda	Orientation of College Teachers/ National Policy on Education
3. Dr. (Ms.) M. D. Bengalee, VC, Bombay University	Restructuring of Courses
4. Dr. Ramlal Parikh, VC, Gujarat Vidyapeeth	Research and Extension

Papers

1. Dr. K.C. Deshmukh, VC, Amravati University	Research, its significance, need and Management in Universities
2. Dr. D. S. Punalekar, South Gujarat University	Examination Reforms and National Policy on Education 1986
3. Dr. K.N. Rao, VC, University of Health Sciences	Teachers' Training
4. Dr. Sneha Joshi, Centre of Advanced Study in Education, Baroda	Professional Preparation for Higher Education Teachers
5. Dr. S.B. Gogate, Jt. Director Indian Institute of Education, Pune	Restructuring of Courses: Experience in Universities in Maharashtra

Saturday, December 19, 1987

9.00 A.M. to 11.30 A.M.

SESSION III

NEW STRATEGIES IN HIGHER EDUCATION

a. Evaluation and Accreditation of Institutions
b. Youth Services, Sports and Physical Fitness Programmes
c. Distance Teaching/Learning

Chairman

Dr. B. H. Rajurkar, VC,
Marathwada University

Rapporteurs

1. Prof. Taqui Ali Mirza, Department of English, Osmania University
2. Dr. B. Trivikram, Department of Business Management, Osmania University

Keynote Speakers

1. Dr. S. Krishnaswamy, VC, Madurai Kamaraj	Evaluation and Accreditation of Institutions
2. Prof. T. Navaneeth Rao, VC, Osmania University	Evaluation and Accreditation of Institutions
3. Dr. B. H. Rajurkar, VC, Marathwada University	Youth Services, Sports and Physic Fitness Programmes
4. Dr. R. G. Takwale	Distance Teaching/Learning
5. Dr. K. G. Deshmukh, VC, Amravati University	Analysing Distance Learning Systems

Papers

1. Dr. Bharat Bhushan, Jammu University	Innovative Distance Education New Operational Strategies
2. Shri D. K. Kansal, Punjabi University	Role of Universities in Modernisin the Sports and Physical Fitnes Programmes as envisaged in Ne Education Policy

12.00 Noon to 1.30 P.M.

SESSION IV

NEW STRATEGIES IN HIGHER EDUCATION

a. National Testing Service
b. Rural Universities
c. Education in Human Values

Chairman

Dr. S. Krishnaswamy, VC,
Madurai Kamaraj University

Rapporteurs

1. Prof. V. Viswanadham, Department of Commerce, Osmania University
2. Mr. R. Suryanarayana Reddy, Public Relations Officer, Osmania University

Keynote Speakers

1. Prof. S. Sampath, Former Director, IIT, Kanpur	National Testing Service
2. Dr. Devendra Kumar, VC, Gandhigram Rural University	Rural Universities
3. Dr. T. K. N. Unnithan, Former VC, Rajasthan University	Education in Human Values

Papers

1. Mr. M. K. Selvaraj, Gandhigram Rural University	Strategies in Higher Education : Rural Universities Case

2.30 P.M. to 4.30 P.M.

SESSION V

PLENARY

Chairman

Dr. G. Ram Reddy
President, A.I.U.

Presentation of Sessional Reports by Rapporteurs

Final Recommendations

OSMANIA UNIVERSITY

A Profile

April 26, 1917 saw the seed being sown for the birth of university in the State of Hyderabad, the largest princely state in British India. The *Firman* or Proclamation issued by H.E.H. The Nizam of Hyderabad Mir Osman Ali Khan, ran as follows :

> *In the Hyderabad Dominions a university should be established in which the ancient and modern, the oriental and occidental, arts and sciences are synthesised in such a manner that the defects of the present system of education are rectified, and the ancient as well as modern methods of physical, intellectual and spiritual education are fully utilized, and in which, along with an effort for the propagation of knowledge, the moral improvement of the students is regulated on the one hand and research work of a high order in all branches of knowledge is conducted on the other....*
>
> *Instruction in the English language as a language should also be compulsory for each student. Therefore, I most gladly order the establishment of a university for the Hyderabad Dominions....*
>
> *In commemoration of my Accession, this university shall be named the Osmania University....*

This proclamation while on the one hand was a milestone in the development of higher education in this region was also unique in another respect. For the first time an Indian language i.e. Urdu was adopted as the medium of instruction, thus marking the culmination of National aspiration to be free from the stranglehold of the English language. The establishment of this University was hailed by many as follows :

Rabindranath Tagore observed "I have long been waiting for the day when, freedom from the shackles of a foreign language, our education becomes naturally accessible to all our people. It is a problem for the solution of which we look to our Native States, and it gives me great joy to know that your State proposes to found a university in which instructions are to be given through the medium of Urdu. It is needless to say that your scheme has my fullest appreciation".

Sir Michael Sadler wrote "The proposal to make the experiment of recognising the vernacular as the medium of instruction in the Osmania University, requiring, in addition, a command over the English language, is most opportune, and upon the successful issue much will depend........"

Initial Phase

A Royal Charter was promulgated on Sept. 22, 1918, according to which H.E.H. the Nizam was to be Patron of the University and the Prime Minister was to be the Chancellor. The highest executive body was the Council and the next in importance were the Senate and the Syndicate. The first appointments to the various cadres were made on June 19, 1919. As the nucleus of what was destined to be a vast university, the University College was inaugurated on August 28, 1919, with Maulana Habibur Rahman Khan Sherwani (later, Nawab Sadar Yar Jung) as the first Vice-Chancellor. In the first phase (1918-34) the University College, the Bureau of Translations and compilations, and the Students' hostels were housed in hired buildings not far from the Nizam's Palace (King Kothi). Soon after, the opening of the first College, preparations were begun for the acquisition of a picturesque plateau of some 1800 acres about three miles from the city of Hyderabad in the village of Adikmet (which in Telugu means "Supreme Height") and plans were drafted for the creation of a well-equipped modern campus.

Initial Enrolment Strength

As per the first administrative report issued in 1918, there were 25 members of staff and 225 students studying Sanskrit, Marathi, Telugu and Kannada, thus reflecting the multilingual and cosmopolitan character of the University. During the same year, the Nizamia Observatory which was under the Government was transferred to the Osmania University. The year 1923 which marked the end of the first five years for the University saw the institution of M.A. and LL.B. courses and a year later the existing medical and engineering schools were raised to college status and affiliated to the Osmania University.

The establishment of the University was followed by starting of Intermediate colleges in Warangal, Gulbarga and Aurangabad and very soon the establishment of a college for women in Hyderabad.

Second Phase

The second phase in the growth of the Osmania University was between 1934-1948. In 1934, the University was shifted to the present campus at Adikmet. The year 1938 saw the completion of the first building and perhaps, still the most imposing structure of the University. The College of Arts, architectured under the guidance of Nawab Zain Yar Jung and which represents a unique blending of the pillar and lintal styles of Ajanta and Ellora and the elegant Indo-Saracenic arches of the super-structure. The completion of this University College of Arts was followed by an uninterrupted succession of construction activity including the Vice-Chancellor's Lodge, a series of hostels, separate buildings for the Departments of Physics, Chemistry, Biology and Engineering College and a few other structures.

It should be mentioned here that the University even at this phase had a remarkable cosmopolitan character and students and teachers were attracted from all over the country. An outstanding achievement was the establishment of a translation bureau which undertook and successfully completed the translation of classical and advanced books in almost all branches of knowledge from the English language into the Urdu.

Third Phase

The next phase in the history of the University started around the year 1948 when the erstwhile Hyderabad State became a part of the Union of India. Very soon, in line with the mainstream of higher education in Indian universities, English became the medium of instruction resulting in the expansion of the faculty to include outstanding scholars from all over the country.

Institutions, Departments and Centres of learning were established. The University very soon achieved recognition as a centre of excellence for teaching and research in a number of disciplines. At the same time, this phase also saw the expansion of higher educati into the rural and district areas. A number of degr colleges, both Government and Private, were establis ed under the guidance and leadership of the Osman University.

The long tenure of Dr. D. S. Reddi as the Vic Chancellor in a way marked the golden era in th growth of the University and transformation of th University from a regional centre of learning to major national university with international acclaim This spurt of growth initiated in the mid-1950s ha continued unabated and the Osmania University ha not looked back, continuing to grow both in size an quality and today it is no wonder that it ranks a one of the premier universities in India.

Present Campus

The present campus of the Osmania Universit extends over 1800 acres as the main campus with th Arts College, housing the University College of Art and Social Sciences and the University College of Commerce and Business Management, Physics Building Chemistry Building, Biology Building, Vice-Chancellor's Lodge, A, B, Old P.G., New P.G., Engineering & Techonology Hostels and a Hostel for Women. The other complexes are University College of Engineering University College of Technology, University Colleg of Law, College of Education, the Tagore Auditorium constructed on the occasion of the centenary of the Late Rabindranath Tagore and the Library building on a hillock, second in its grandeur only to the University College of Arts.

The end of the 1960s saw the construction of an independent administrative block. The latest addition to the building activity is the College of Commerce and Business Management, which was so far housed in the building of College of Arts.

Beyond the Campus

In addition to the main campus, the University College for Women, the Nizam College, the P.G. College in Secunderabad and the P.G. College of Science at Saifabad, the P,G. College of Law and the P.G. College, Bashirbagh are parts of the University (Constituent Colleges). In addition to the above colleges, during the past one decade the University's campus has also been extended to the Institute of Genetics at Begumpet, Rangapur Observatory—with 48'' telescope about 30 miles away from the city and P.G. Centres at Biknoor in Nizamabad District odavari Khani in Karimnagar District, Mirzapur in edak District and the Kothagudem School of Mines the coal town of Kothagudem, Khammam District. e various P.G. Centres are centres of higher train-g and research in exclusive fields and at the same ne represent milestones in the efforts of the Osmania niversity to extend and expand both facilities of beral education and specialised and technical ducation to district centres far removed from the etropolitan city of Hyderabad.

A landmark in the development of the Osmania Jniversity was the establishment of another university t Warangal, the Kakatiya University which was onstituted out of erstwhile colleges, both constituent nd affiliated, under the Osmania University. It may lso be pointed out that the basic infrastructure for he establishment of Andhra Pradesh Agricultural Jniversity was also provided by the Colleges of Agri-ulture and Veterinary Sciences which were integral arts of Osmania University.

Present Picture and Emerging Trends

The present picture of the Osmania University stands as a major university of India with 7 campus colleges and 6 constituent colleges. The constituent colleges which were until recently mainly concerned with undergraduate education have been converted into centres of postgraduate education and research. In addition, the University has 73 affiliated degree colleges and 11 Oriental degree colleges in the city and 44 degree colleges in the districts of Telangana under its jurisdiction. Many of them are in the process of emerging as centres of P.G. education. Particular mention may be made of starting of P.G. education in the district centres at Karimnagar, Nalgonda, Nizamabad and Mahboobnagar.

The emerging trends of non-formal and distance education have also been taken into reckoning by the University leading to the establishment of an Institute of Correspondence Courses, offering correspondence programmes both at undergraduate and postgraduate levels and a Centre for Non-Formal and Continuing Education and also Adult Education. The Osmania University which had started with an enrolment of 225 students and 25 staff members today proudly presents the following picture of enrolment and staff :

Enrolment

	Boys	Girls	Total
Undergraduates	66,000	28,000	94,000
Postgraduates	4,500	1,500	6,000
M.Phil and Ph.D.			1,300

In addition to the above, last year about 23,000 students took degrees through external examinations and about 2,500 students took their degrees through correspondence courses.

Staff

Professors	269
Readers	496
Lecturers	365
	1,130

The University had 178 colleges till last year and this year it gave away 30 colleges including Oriental Colleges to Kakatiya University. The present affiliation position is

University Colleges	7
Constituent Colleges	6
P.G. Centres in Districts	4
Mining School at Kothagudem	1
Affiliated Colleges	130
Total :	148

Interaction with other institutions

While the Osmania University has been steadily growing, it has, at the same time, also established interaction with a number of institutions to promote the cause of research and teaching, like the Regional Research Laboratory, National Geophysical Research Institute, Central Institute of English and Foreign Languages, Indian Drugs and Pharmaceuticals Ltd. (IDPL), National Institute of Nutrition, National Institute for Rural Development and National Remote Sensing Agency which are all national institutes and have been recognised as research centres by the Osmania University. A unique example is the close relation between Osmania University and the IDPL where the university has established very close academic relationship with an industry. Yet another unique example is the close academic relation between the Osmania University and the College of Military Engineering. The Osmania University while retaining its concern for academic excellence and quality, has at the same time broken all traditional barriers by establishing relationship with other institutions both governmental and non-governmental. The culmination of this culture of establishing productive academic relationship with other agencies, was the decision at the Academic Council of the Osmania University to accord recognition to all national and regional institutions throughout the country as centres for doctoral research.

Yet another feature of the University is the location of specialised institutions on its campus, like American Studies Research Centre, Institute of Public Enterprises; both these institutions in a way are apex centres of research and training in the specialised areas.

Promotion of Traditional Teaching

Along with the expansion of research, teaching and training activities of the University, mention should also be made of the activities of the University in the direction of promoting learning and research in areas of traditional education, the Dairatul Maarif, the Sanskrit Akademi and the Tulsi Bhavan, adjacent to the Institution of Electronics and Telecommunications Engineers. These stand as evidence of the University's efforts to serve as an instrument linking traditional wisdom with modern knowledge.

Centres for Specialised Study and Services

The Osmania University is in addition having the following organisations imparting training in their specialised fields at international/national level and conducting research in their respective fields. They are the Centre for Exploration Geophysics, Regional Centre for Urban and Environmental studies. The Southern Regional Centre of the ICSSR, Centre for Area Studies, Centre for Economic and Social Studies, Institute of Electronics and Telecommunications Engineers, English Language Cell and University Computer Centre. The University is having a Health Centre, to serve the students and staff of the University. It is also having a University Employment and Guidance Bureau, to assist the freshers into the Life.

The University has a Department of Printing and Publication which takes care of the printing needs of the University and also publishes learned works of the faculty members.

Audio Visual Research Centre

The University has kept itself abreast with the developments in the sphere of educational technology and with the assistance of the University Grants Commission (UGC) an independent Audio Visual Research Centre has been established. This centre undertakes preparation and production on different types of video cassettes and films, both complementing and supplementing the regular instruction process.

In addition, the University has also established a resource centre for minority schools sponsored by the National Council for Educational Research and Training (NCERT) to organise training programmes for school teachers drawn from schools run by educationally backward minority institutions.

Research Activities

Last year this University has awarded Ph.Ds to 211 candidates and M.Phils to 98 candidates (M.Phil. is only in the Arts, Social Sciences, and Commerce hence less number of M.Phils.).

The good part of the developmental budget relates to research schemes, sanctioned by the various national agencies like, UGC, CSIR, ICMR, ICAR, DST, NCERT etc. Over the years the University departments have acquired very sophisticated instruments for carrying out latest research in tune with the upto date developments in the country, in various advanced fields.

The following departments of the University have been recognised by the UGC either as Centres for Advanced Study or for Special Assistance : Chemistry, Physics, Biochemistry, Astronomy, Geophysics, Geology, Linguistics, and Economics.

In addition other Departments are also actively involved with research programmes sponsored/financially supported by different agencies like the CSIR, ICAR, DST, ICMR, UGC, ICSSR, DAE and other governmental agencies.

Staff Development

The University has always been aware of the need to stimulate and support personal and professional growth of its staff both academic and administrative.

In line with this a Staff Training College for the administrative staff was established a few years back and regular programmes on administration and management have been organised for the administrative staff.

On the academic side, the University has been organising research seminars, refresher courses and summer institutes in various departments for the past 2 decades. The culmination of all this is the establishment of an Academic Staff College with financial support from the UGC.

Socially Oriented Schemes

The University has under environmental protection/improvement/programmes in the campus, social forestry, green belt programme, Deer Park and Energy Plantation.

The Osmania University is 70 years old but young in spirit. The University has been sensitive to the changing demands of the society, has kept its vision open to opportunities and has integrated both basic academic values of excellence and social demands, generated by complex social and technological changes in the society. □

University College of Commerce & Business Management

Osmania University
A Pictorial View

Chemistry Department

Administrative Block

Osmania University
A Pictorial View

University College of Arts

Methodology for Women's Studies

A three-day workshop on Metho-logy for Women's Studies was cently organised by the Mother eresa Women's University. In her troductory address, Dr. Jaya othai Pillai, Vice-Chancellor aced the origins of the University d also explained the relevance of omen's Studies. She referred to e ongoing projects of the uni-rsity and emphasised that the ojects should be action-oriented. ne stressed that women's studies ould not become another irrele-ant academic theory oriented or eological social science. It should ring atleast a few changes in the so-iety. It should be multi-cross-inter nd trans-disciplinary and not a nilateral in approach. She reveal-d that the University was plann-ng to start a course leading to ostgraduate degree in Women's tudies and solicited suggestions n this regard. She also sought uggestions as to topics which were nore action-oriented and applica-ion-oriented for carrying out neaningful researches.

Dr. Neera Desai, a pioneer in Women's Studies, who inaugurated the workshop, clarified some doubts regarding the use of certain techniques or tools for research in Women's Studies. She decried the craze for survey research started in India after 1930s due to American influence. She pointed out that various methods such as (a) survey, (b) phenomenology; (c) content analysis, and (c) comparative analysis could be adopted in doing research. She said that in order to get a cohesive picture about a problem both quantitative and qualitative methods should be adopted. She explained the various methods followed by the S.N.D.T. Women's University in conducting researches in Women's Studies. S.N.D.T. Women's University had a separate cell for action oriented programmes to elevate the status of women. With the help of rural development programmes this cell was taking up action-oriented programme, she added.

Papers on different aspects of Women's Studies were presented at the workshop. These included (1) Breaking out of Invisibility: Rewriting the History of Women in Ancient India; (2) Methodology in Women's History—An Intergenerational Study of the Family; (3) Reconstructing Women's History: Problems and Paradigms; (4) The Challenge of Women's History; (5) Within the Zenana : Readings from a Certain Housewives' Diary; (6) Women's Studies Research : A Paradigm Perspectives on Women's Liberation; (7) Feminist Approach to Women's Studies. The workshop, attended by delegates from various colleges and research scholars of the University was addressed by Dr. Uma Chakravarthy, Dr. Aparna Basu, Dr. Sudhir, Ms. Kum Kum Roy, Dr. Malavika Karlekar, Dr. Prabha Mahale, Dr. Atlury Murli, Dr. Susheela, Kothai Rhenius and Dr. A Surya Kumari.

Delivering the valedictory address the Vice-Chancellor said that history had its own weightage and without knowing the past it was impossible to understand the present. She emphasised action-oriented researches since it was the motto of the Mother Teresa Women's University. She advised that a combination of quantitative analysis with qualitative interpretation should be followed in research and stressed the need for field studies. She considered three factors, viz., integration, knowledge and development as ingredients for Women's Studies.

She requested participants to help the University in setting up an Archival Centre. She categorically stated that the Library of the University would be developed into a full-fledged International Advanced Centre for Women's Studies.

New INSA Fellows

Three eminent scientists of the Banaras Hindu University (BHU), Prof. Tikaram Sharma, Prof. Har Darshan Kumar and Prof. Suhas C. Sanayal, have been elected Fellows of the Indian National Science Academy, New Delhi in recognition of their outstanding contribution in the disciplines of Zoology, Botany & Microbiology respectively.

Born on 29th March 1935 in the Distt. Darjeeling (West Bengal), Prof. Sharma, former Head, Deptt. of Zoology, BHU has made significant contribution in the field of Cytogenetics (General & Evolutionary) and Mutagenesis. He has had also been honoured with British Council Bursary, Unesco (ICRO) Fellowships, Commonwealth Academic Staff Fellowship, GSF Fellowships (West Germany) and many other awards.

Prof. Har Darshan Kumar, Coordinator, Centre of Advanced Study in Botany, BHU has made pioneering contributions in the field of Genetics of blue green algae, which are microscopic plants playing key role in the nitrogen economy of the soil. He discovered for the first time, the phenomenon of genetic recombination in blue green algae. He also had significantly contributed to the understanding of nitrogen fixation mechanism in blue green algae. Born in 1934, Prof. Kumar is also a fellow of the Indian Academy of Science, Bangalore and Explorers Club of New York. Recently he has been conferred the degree of Doctor of Medicine (M.D.) by the Board of Directors, Medicina Alternative, Denmark.

Prof. and Head of Microbiology in the Institute of Medical Sciences, BHU, Prof. Suhas Sanyal has done pioneering work in the field of gastro-intestinal problems. His original contribution in the aeropathogenesis of diarrhoea caused by non-cholera virus and related organism, is widely acclaimed. His fundamental research in the study of micro-organisms and viruses causing cholera disease has been recognised by the experts in the field of Medical Sciences. The National Academy of Medical Sciences in 1984 elected Prof. Sanyal as its fellow (F.A.M.S) for his discovery of a new cholera toxin.

There are 15 fellows of Indian National Science Academy in the Banaras Hindu University in the Faculties of Science (Ten), Engineering (Three) and Medicine (One) including the Vice-Chancellor, Prof. R.P. Rastogi.

Space Power Generator

An Indian scientist has developed Generator (SPG), a machine Space Power that extracts electricity from an empty space.

Mr. Tiwari, according to a report published in the Gujarat Electricity Board house journal, built the prototype SPG at the Tarapore Atomic Plant. It consists of a magnetised conducting cylinder rotating at a high speed with the help of a motor.

According to the scientist, the SPG produces three times more power than its consumption, defying known laws of science which say that output cannot be greater than input. The excess power came from the empty space between atoms of the rotating cylinder confirming his "Space Vortex Theory", developed 12 years ago.

Mr. Tiwari contends that SPGs generating as many as 50 KW of power from space could be easily built.

The machine was recently demonstrated in West Germany at an international conference where it was hailed as a breakthrough in energy generation.

New Courses at Punjabi University

The Academic Council of the Punjabi University, Patiala, has accorded its opproval for the introduction of B. Ed. Course through correspondence for the recognised school and college teachers. It also approved the introduction of M.Phil in Punjabi at the University's Regional Centre, Bathinda and M. Com. in the Govt. Bikrim College of Commerce, Patiala from the next academic session.

Setting up of Guru Kashi Institute of Advanced Studies in Rural Development at Damdama Sahib, Sant Harchand Singh Longowal Chair and Faculty of Punjabi Studies at the campus are also reported to have been approved by the University's Syndicate recently.

Funds for Tamil University

The University Grants Commission (UGC) has sanctioned Rs. 10 lakhs for the construction of buildings for the School of Philosophy of the Tamil University at Kancheepuram. According to Dr. S. Agesthialingam, Vice-Chancellor, out of Rs. 110 lakhs allotted to it under the Seventh Plan, the UGC had sanctioned Rs. 35 lakhs to the university so far. A computer purchased for Rs. 8 lakhs out of the UGC grants, would be commissioned shortly. The Tamil N
Government had sanctioned to
University Rs. 95 lakhs for ann
maintenance and Rs. 30 lakhs
buildings this year.

During the current year,
university proposes to constr
new building for the compu
centre at a cost of Rs. 12 lakhs
quarters for the staff at a cost
Rs. 20 lakhs.

New Deemed Varsiti

The Union Ministry
Human Resource Development,
the advice of the Univers
Grants Commission, is reported
have accorded the "deemed U
versity" status to the Lal Bahac
Shastri Rashtriya Vidyapith, N
Delhi, and the Rashtriya Sansk
Vidyapeeth, Tirupati.

Manuscrip Maintenance A

The National Archives
India is reported to have drawn
a scheme under which financ
assistance upto Rs. 2 lak
would be given annually
voluntary organisations, education
institutions, libraries, museum
and universities, and individu
scholars for purchase, preservatio
listing, cataloguing, evaluation an
publication of manuscripts.

Sanskrit Varsit for Keral

A Sanskrit University is propo
sed to be set up at Kaladi, th
birth place of Adi Shankar
According to Union Minister o
State for Education, Mrs. Krishn
Sahi, the Central Government ha
sanctioned Rs. one crore to th
Kerala Government for th
infrastructure development of th
proposed university.

News from Agril. Varsities

Workshop on Plant Genetic Resources

A three-day international workhop on plant genetic resources vas recently held in New Delhi. ointly organized by the Interational Board for Plant Genetic esources (IBPGR) and the Indian Council of Agricultural Research, ICAR), the workshop was inaugurated by the Union Minister for Agriculture, Mr. G.S. Dhillon.

In his address Mr. Dhillon said hat some of the major food crops n the South East Asia had been pushed to the brink of extinction as a result of increasing pressure on the land. The situation demands urgent efforts to salvage the endangered species before they are lost or ever," the Minister said. He stressed that the preservation of vital species could only be taken on a global basis.

A memorandum of understanding was also singed between the ICAR and the IBPGR for scientific and technical collaboration in the field of plant genetic resources. It envisages a long term collaborative programme to train Indian scientists to collect, evaluate and suggest measures for conservation of germplasm.

The IBPGR will soon open a field office in New Delhi to promote genetic resource activities in South East Asia. The office will accelerate efforts to conserve the country's rich genetic diversity of crop plants and their wild relatives. It has also asked the National Bureau of Plant Genetic Resources, which is a part of the ICAR, to serve as an Asian repository for collection of half a dozen plants that include sugarcane.

Dhillon Calls for Ecological Balance

Mr. G.S. Dhillon, Union Agriculture Minister, warned that the country was heading towards irreversible ecological changes because the efforts to conserve the environment were still minimal. He said that the strategies for increased agricultural production must work with nature and not against it. The practices leading to ecological aggression against the environment need to be discarded. Mr. Dhillon was inaugurating a National Symposium on Statistical Ecology in New Delhi recently which was organised by the Indian Agricultural Statistical Research Institute.

Referring to this year's widespread drought, Mr. Dhillon said, "When we destory forests, we break the delicate ecological balance that nature maintains, and drought and floods are the consequences".

He said with increasing demand for food and other crops, more grazing lands were being brought under the plough despite higher yields. Simultaneously, forests had stared disappearing with the result that there was soil erosion, floods and silting of rivers and reservoirs. Proper soil conservation measures were proving to be costly programmes and there was need for a solution on how land ought to be conserved.

Referring to irrigation projects, the Minister said there was need for a scientific review of these, based on statistics, their benefits to agriculture and the likely extent of adverse environmental effects. This would go a long way in the formulation of policies to halt the destruction of the ecosystem.

Sports News

Sports Committee Meets at Hyderabad

Sports Committee of the Association of Indian Universities (AIU) is scheduled to meet at Osmania University, Hyderabad on 16 December, 1987. The meeting will be presided over by Prof. G. Ram Reddy, President, AIU, and VC, Indira Gandhi National Open University. A number of important issues are likely to come up for consideration of the committee. It will consider inclusion of Soft Ball; 800 M. (W); 4 x 200 M.; Free Style Relay (M); and 200 M. Individual Medlay Relay (M) in the schedule of Inter-University Tournaments. Its earlier decision to permit guest players to participate in the Inter-University Competitions is also likely to come up for review. It is felt that participation of guest players will encourage professionalism in university sports. A number of proposals for amendments to rules for Inter-University Tournaments like conducting Inter-University Rowing Championship (M& W) on League -

cum-Knock out basis, and raising the strength of Water Polo team from 11 to 13 players will also be discussed.

The question of giving weightage to Inter-University Judo Competition for the award of Maulana Abul Kalam Azad Trophy and Dr. B.L. Gupta Trophy will be discussed. The committee will also consider recommending a uniform diet allowance to be paid to sports persons participating in Inter-University Tournaments. The Committee will receive recommendations of a number of sub-committees constituted by the President, AIU. These include organisation of inter-zonal tournaments in selected disciplines on the lines of the Vizzy Trophy Tournaments; organisation of festivals in indigenous/traditional games in the form of demonstrative events; and introduction of adventurous activities for the University youth.

The committee will also have for its consideration recommendations of the sub-committee on the follow up of the recommendations of the National Seminar on Physical Fitness and Sports Standards in Universities organised by AIU at Udaipur on May 9-10, 1987. It will be recalled that the seminar had recommended *inter-alia*:

(i) prescribing a minimum unit of facilities required for a new university and a new college for purposes of recognition by UGC/AIU;

(ii) suggesting a minimum playing area required for a new university or a new college;

(iii) evolving a scheme of Sports Talent Scholarships proposed to be extended to university level;

(iv) suggesting a uniform system of giving concessions to outstanding sportspersons in class attendance for the period they are away from the university/college for sports purposes such as participation in competitions, coaching camps, etc; and

(v) working out a scheme Sports Research Cells proposed be set up in the universities colleges.

News from UGC

INSAT-1B Programme of UGC

Between 15th December to 31st December, 1987 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV Network throughout the country. For the viewers in Delhi and surrounding areas these programmes can be seen on the second channel.

15.12.87
"New Economic Policy-III"
"Raw Materials-Natural Rubber"
"For Each And Everyone"

16.12.87
"Dawn Of Man"
"Malaria II"
"Blood Is For Circulation"

17.12.87
"Flint Implements"
"Dreams Of Distant Shores"
"Heat Of The Earths Entroils"

18.12.87
"Energy To Go Round"
"Journey Through The Solar System"
"The Fourth Planet"

19.12.87
"Cinematic Eye-Jules And Jim"
"Language Of Gestures-V"

20.11.87
No Telecast

21.12.87
"Suffering Brilliance"
"Manmade Macromolecules"
"Electrochemistry In Action"

22.12.87
"New Economic Policy-IV"
"Raw Materials-Bauxite"
"Rails"

23.12.87
No Telecast

24.12.87
"Paleolithic Society"
"The Continuing Past"
"Spring In Sikkim"

25.12.87
No Telecast

26.12.87
"Cinematic Eye: The Cabinet of Dr. Caligari"
"Language of Gestures VI"

27.12.87
No Telecast

28.12.87
"Rising Mathematics-Falling Health"
"Quantum Theory: Electrons & Protons"

29.12.87
"Defence Mochanism-Anxiety"
"What is Behaviour"

30.12.87
No Telecast

31.12.87
"Mesolithic Society"
"Brown Coal In Rhineland"
"University Roundup"

News from Abroad

Restructuring Soviet Education

A Major restructuring of the education system in the Soviet Union has been undertaken with the main aim of creating a fundamental base to meet the revolution taking place in the field of science and technology. Restructuring envisages that each future specialist will acquire a definite profession while he or she is still a student. The emphasis will be not on academic knowledge but also on practical skill. Students will study not only to pass regular examinations but will also have to solve practical problems as part of their schooling process.

According to Mr. Gennadi Yagodin, Minister of Higher and Secondary Specialized Education in the Soviet Union, "Mistakes in education policy can be very costly for any country...for the effects may be felt after 10 years or more and by that time a lot of damage may have been done to the economy". Over the past few years a public discussion on restructuring of the education system was conducted and it is claimed that 890,000 professors, teachers and students participated in these discussions and more than 200,000 recommendations and suggestions were submitted to the Government.

Earlier too many subjects were being taught at schools and it had become impossible to give the students a solid fundamental base in the subjects they studied. Now the number of subjects has been restricted and effort would be to give them a solid basis with which they will be able to cope with the technological revolution taking place.

Mr. Yagodin, who is Deputy of the USSR Supreme Soviet admitted that the Soviet Union had lagged behind in computer education. "But now over the next two or three years every school in the country would have a computer and we are going in a big way for small personal computers" he said. The restructuring, he added, was already beginning to show result. The country hopes to increase two and a half times the volume of research and develoment work at higher educational institutions by the turn of the century.

Mr. Yogodin pointed out that 97% of the world scientific and technological literature is translated into Russian and is made available to the universities in the form of abstracts. "Moreover, there is hardly a scientist in the country who does not have more than a working knowledge of English and therefore keeping abreast with what is happening in the rest of the world is not a problem." he added.

One of the main aims of the restructuring education is that each student must master, while he is a student, the entire range of professional skills and labour functions in his chosen field. This approach is followed in the study of medicine where a doctor qualifies through examinations and also undergoes training in a hospital. The same approach could be applied to a whole range of other professions ranging from a skilled worker to production manager.

The other major change the system has undergone since March this year is the process of democratization in the universities. It is the Academic Council that is responsible for the selection of teachers and now all teachers would be given, to begin with, a five-year contract. After that period their work would be reviewed by the Academic Council which would decide on a fresh contract. Students have been given a big say in the Council for 25% of the seats have been filled by elected students.

The democratization process has also been extended to the appointment of Rectors (the same functions as a Vice-Chancellor in this country) and Deans of universities. The Scientific Councils which are empowered to elect Deans and Rectors also have 33% seats reserved for elected students. "This has been done for the first time in the Soviet Union" said Mr. Yagodin and he was confident that the system would work.

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University News

सम्पूर्णानन्द संस्कृत विश्वविद्यालय, वाराणसी के महत्वपूर्ण प्रकाशन

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(17)	**अभिधम्मत्थसंगहो**—आचार्य अनिरुद्ध द्वारा विरचित यह ग्रन्थ अभिधमार्थ का गम्भीर विवेचनात्मक संग्रह है। दोनों भागों का मूल्य—	35.00
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11. Synrem, H. Kalian. *Revivalism in Khasi society*. NEHU. Dr. (Mrs) S. Miri.

Fine Arts

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Formally inaugurated on 2 November, 1987 to disseminate and advance knowledge, particularly to make special provisions for studies in tribal life and culture, for integrated courses of Humanities and Sciences in the educational programmes, for promoting inter-disciplinary studies and research and also for introducing vocational courses for fostering economic growth and promoting employment opportunities in the State.

The University is open to persons of either sex of whatever race, creed, caste or class.

Courses offered at present

1. M.A./M.Sc. Courses (Two years) in :-
   (A) Chemistry; (B) Life Science; (C) Mathematics;
   (D) Analytical and Applied Economics; (E) Modern History;
   (F) Bengali; and (G) Sanskrit.

2. Ph.D. programmes in all the above subjects.

3. Bridge Courses (One year) in :-

   (A) Sanskrit; (B) Analytical and Applied Economics; and (C) Mathematics.

4. Undergraduate Colleges : 12 (Twelve)

5. Professional Colleges : 4 (Four)

   (Engineering, Law, Physical Education and Education)

6. Subjects taught in Undergraduate Colleges :-

Bengali; English; Sanskrit; Hindi; History; Economics; Political Science; Sociology; Education; Philosophy; Geography; Physics; Chemistry; Mathematics; Statistics; Zoology; Botany; Physiology; Psychology; Defence Studies; Commerce and Music

7. Number of Students in Undergradate Colleges:

   about 10,000 (Ten thousand)

8. Number of students in the Post Graduate Departments:

   about 400 (Four hundred)

Several new courses (for M.A./M.Sc./M.Com./M.Phil.) are proposed to be introduced.

For further details the Registrar, Tripura University, Agartala - 799004, Tripura, may be contacted.

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A NOTE ON MOTHER TERESA WOMEN'S UNIVERSTY

KODAIKANAL

Mother Teresa Women's University was founded in March, 1984. It functions as a centre for furthering the advancement of learning and procecution of research in women's studies and concentrates on the welfare of the rural women folk, destitute women and women in impoverished state. The university uses the media of education, training, research and extension services for achieving its goals.

Women's studies pertaining to the following eight disciplines are conducted in the university :

1. Economics
2. Education
3. English (communication, publication and extension)
4. Family Life Management
5. Historical Studies
6. Psychology
7. Sociology
8. Tamil (communication, publication and extension)

The University has also started a Computer Science Department and offers courses in Computer Science, Computer Awareness for Housewives, Computer Applications etc. The University has conducted a number of seminars on themes such as

Women in women's writing.
Development of women through education.
Uplift of women during the 20th century.
Towards the 21st century - a focus on women.

A Health Cell has been instituted at Madras to report on the health status of the women of Tamil Nadu. A Legal Cell is functioning for the purpose of reporting on the legal status of women all over India.

As the university is situated in a hill area, a number of micro-studies on the status of women in this area - both tribals and non-tribals with the aim of following up the studies with development oriented activities/projects have been taken up.

The university has started extension centres at Madras, Nagercoil, Karaikudi, Madurai, Trichy, Tanjore, Salem and Chidambaram and, in collaboration with the universities/colleges situated in these places, studies on the problems and issues of women have been taken up. Some of the micro studies taken up are:

Status of women in Kodaikanal Taluk.
Profiles of the women headloaders of Kodaikanal Taluk.
Profiles of the women stonebreakers of Kodaikanal Taluk.
Profiles of the women stonebreakers of Salem.
Problem of women in prison in Tamil Nadu.
Analysis of dowry practices in Kanyakumari District.
Analysis of dowry practices among the Nagarathars.
Profile of the fisherwomen along the coastal areas of Tuticorin and Nagercoil.
Problems of the tribal women of Thandikudi.
Dropout among girls in Kodaikanal Taluk.

The University is also involved in organizing mass campaigns, seminars, workshops, extension lactures etc. for sensitizing and activizing women at all levels to the various issues such as dowry, illiteracy among women, equal status, sexist bias in curriculum, projection of women in media, drudgery reduction, health and nutrition, environmental hygine, empowerment of women etc.

The university has a very well equipped library and about 25000 volumes essentially on women's studies pertaining to various disciplines have been collected. The university has brought out 12 publications, all concerning women.

The university has now acquired about 60 acres of land and hopes to start the building programme during 1987-1988 itself. The university, at present is in receipt of financial assistance from State Government only. The university's development and future progress will depend on the quantum of financial assistance to be received from the UGC and the university looks forward to an early sanction.

MINISTRY OF HUMAN RESOURCE DEVELOPMENT (DEPARTMENT OF EDUCATION)

USSR GOVERNMENT SCHOLARSHIP FOR THE YEAR 1988-89.

Applications on plain paper are invited from Indian nationals for the award of 70 scholarships (35 for Post-Doctoral studies/Higher Specialisation and 35 for Doctoral Degree) offered by the Government of the USSR for the year 1988-89 as per the following details:-

(A) Subject-fields for Post-Doctoral-Studies/Higher Specialisation

(1) Solid State Physics (including Micro-electronics, Laser Technology Materials and Surface Studies) (2) Plasma Physics (including LASER, PHD, REB and Fusion Studies) (3) High Energy Physics (4) Cryogenics (5) Heat & Mass Transfer (6) Geophysics & Seismology (7) Biotechnology & Genetics (8) Catalysis (9) Corrosion (10) Materials for Thermonuclear Fusion (11) Oceanography (12) Powder Metallurgy (13) Computer Modelling (14) Environmental Sciences (15) Electro-Metallurgy (16) Organic Synthesis (17) Fibre Optics (18) Space Sciences (19) Astronomy and Astrophysics (20) Mathematics (21) Pure Chemistry.

DURATION: Upto 2 years (with about 6 months' Russian Language Training).

VALUE: Maintenance allowance of Roubles 100-200 per month depending on the nature and level of the course.

QUALIFICATIONS: Uniformly good academic record (with 60% or above marks at Master's Degree level) with Ph.D. Degree in Science/Engineering/Technology, as the case may be, or equivalent qualification in the subject selected or in an allied field. Preference will be given to persons possessing knowledge of Russian Language.

(B) Subject-Fields for Doctoral Degree

(1) Agronomy (2) Biological Plant Protection (3) Computer Science (4) Energy Research (Conversion & Source) (5) Fibre Optics (6) Mathematics (7) Material Science (8) Micro-Biology (9) Molecular Biology (10) Plant Cell Fusion (11) Plant Physiology of Enviromental Resistance (12) Solid State Physics (13) Tribology (14) Geo-Physics (15) Geology and (16) Chemistry.

DURATION: Four years (including about one year for Russian Language Training).

VALUE: Maintenance allowance of Roubles 100 per month

QUALIFICATIONS: Uniformly good academic record with atleast 60% marks at Master's Degree level or equivalent qualification in the subject selected or in an allied field.

(C) Essential Experience for Doctoral Studies Only

Atleast two consecutive years' teaching/research/practical experience as on 1.10.1987 in the subject fields selected after passing the prescribed qualification (successful completion of M.Phil/Pre-Ph.D. course will be counted towards experience for Doctoral Degree).

(D) Age: Not more than 35 years for Post-Doctoral studies & 33 years for Doctoral Studies, as on 1.10.1988 (Relaxation in age upto 2 years will be given in the case of Scheduled Caste/Scheduled Tribe candidates). Upper age limit and experience can be relaxed by not more than three months at the discretion of the Selection Committee in the case of brilliant candidates.

(E) Passage Cost: The passage cost from the USSR to India will be provided by the Soviet authorities after completion of the course/training. Travel expenses from India to the USSR will have to be borne by the candidate or his/her employers/sponsors. Subject to availability of funds, the passage cost may be met by the Govt. of India, provided the candidate is eligible under the rules. Only those candidates whose parents/guardians' income is less than Rs. 12,000/- per annum from all sources after permissible deductions are eligible. If the applicant is employed, his salary also will be taken into account. However, if the applicant has been in full time employment for at least two years before the last date prescribed for submission of applications, the salary to be taken into account for the purpose of income limit would be the applicant's salary and not that of the parents/guardians. Candidates interested in applying for passage cost may ask for further details only after they have been informed of their final selection by

NOTE: (i) The following must be attached with the applications:- (a) Attested copy of the certificate showing the date of birth. (b) Attested copy of the marks sheet of the qualifying examinations. (c) Attested copies of all degrees/ diplomas/certificates etc. (ii) Candidates with equivalent foreign qualifications will also be considered. (iii) Master's Degree means M.A./M.Sc./M.Tech./M.E., but not M.Phil or Pre-Ph.D. (iv) Where Grades are awarded, the conversion formulas of the University/ Institution must be indicated. (v) Candidates must furnish a clear and precise programme of study/ research in the USSR. (vi) Applications in the subject-fields other than those specified will not be considered. (vii) Candidates who have already been abroad for study specialisation/training either on a scholarship or on their own are eligible to apply only if they have been in India for atleast three consecutive years after their return from abroad. (viii) Candidates should have adequate knowledge of Geographical situation, culture & heritage of India and the USSR. (ix) Applications of candidates who are at present abroad will not be considered. (x) Candidates who do not possess the requisite qualifications need not apply. (xi) A candidate already possessing a Ph.D. Degree is eligible to apply only for a Post-Doctoral course and not for another Ph.D. (xii) The application form should accompany a crossed Postal Order of Rs. 5/- (Rs. 1.25 in case of Scheduled Castes/Scheduled Tribes and other Backward Classes) payable to the Secretary, Ministry of Human Resource Development, Deptt. of Education, New Delhi. (In case of employed persons Postal order should be attached with the advance copy only). (xiii) Applications which do not contain the Postal Order will not be considered. (xiv) The candidates are not allowed by the Soviet Union to take their spouse/ family with them to USSR. (xv) One application should be submitted for one subject only. Candidates should apply for the above scholarships on plain paper, furnishing the following details and attested/photostat copies of Degrees/Diplomas/Marks Sheets/ Date of Birth to the Secretary, Ministry of Human Resource Development (Deptt. of Education), External Scholarships Division, ES.3 Section, Room No. 516, B-Wing, Shastri Bhavan, New Delhi-110001 by **31.12.1987.** The documents should be properly tagged. Applications received late will not be entertained.

FORMAT OF THE APPLICATION

1. Name of the Scholarships Scheme: **USSR Government Scholarships, 1988-89.**
2. (a) Subject (b) Sub-subject:
3. Name of the candidate (in block letters), with full Mailing address
4. Date of birth and the State to which the candidate belongs:
5. Whether a member of Scheduled Caste/Scheduled Tribe or a Tribal or aboriginal community. If so, give full particulars:
6. Academic record starting from High School/Higher Secondary:

Name of the University/ Board/ Instt.	Examination(s) passed	Year of passing	Division/ class with position if any*	% of marks obtained & position if any	Subjects taken

* (in case no Division/Class is awarded & only grading is done the conversion formula adopted ;may be mentioned)

7. Details of Professional, Practical Training & Research Experience, specifying the period and number of papers published, previous employment with name and date of employment, if any.
8. Nature of the present employment with date of appointment, designation and the name and address of the employers.
9. Have you been abroad? If so, give full particulars of the country and the period; also, mention the year of return to India.
10. Proposed programme of study/research/training specifying, (i) the work in which engaged at present (ii) nature and programme of study/research desired (iii) future plans/prospects after the proposed studies/ research, and (iv) how are these related to the technical or economic development of India?
11. Crossed Postal Order of Rs. 5/- (Rs. 1.25 in case of SC/ST candidates etc.) No. and date of Postal Order to be given) may be attached with the form with passport size photograph (one copy).

NOTE: Employed persons must send their applications fully sponsored by the Employer. However, advance applications will be considered provisionally pending sponsorship by employers.

Signature of the Candidate)

Place: Date:

davp 87/448

UNIVERSITY GRANTS COMMISSION

BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110002.

CORRIGENDUM

Applications were invited for filling in the posts of Junior Stenographers (English) in the office of the University Grants Commission as per advertisement issued in the 'Employment News' dated 1st August, 1987 and other dailies.

The number of vacancies and procedure/method of recruitment to the posts of Junior Stenographers have undergone certain changes/modifications. Accordingly, the revised number of vacancies and procedure/method of recruitment will be as follows:-

Number of vacancies :- fourteen
(including posts reserved for Scheduled Castes - 4 and Scheduled Tribes - 3)

Scheme of examination/test/interview :-

Part I. Written Examination:- The subjects of the examination, the time allowed and the maximum marks shall be as under:

Subject	**Time allowed**	**Maximum Marks**	**Remarks**
General English and General Knowledge	1 1/2 hours	150	(There will be only one paper instead of two separate papers notified earlier)

Part II. Shorthand test - 150 marks
(for those who qualify at the written examination)

This part shall comprise of a Stenography test of one dictation in English at a speed of 80 w.p.m. for ten minutes. This will be required to be transcribed in 60 minutes. There will now be only one dictation @ 80 w.p.m. instead of two notified earlieir.

Part III. Personality Test (interview)- 100 marks

The other conditions of the earlier advertisement will remain the same.

The candidates who have already submitted their complete applications in the prescribed form, need not apply again.

The complete application in the prescribed form (as per earlier advertisement) should reach the Secretary, University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-110002 within 15 days from the date of issue of this advertisement.

DAVP 823(22)87

****

SCHOOL OF PLANNING AND ARCHITECTURE : NEW DELHI-2.

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APPOINTMENT

Applications are invited from Indian Nationals for one temporary post under Plan of Professor of Industrial Design in the School of Planning and Architecture, New Delhi.

Pay-scale : Rs.1500-60-1800-100-200-125/2-2500 (Prior to revision)
Age limit : Below 50 years.

QUALIFICATIONS :

ESSENTIAL :

i) Bachelor's Degree/equivalent professional qualification of a recognised university/institution in Product Design/Industrial Design/ Architecture/Applied Art/Engineering.

ii) Master's Degree/equivalent Post-Graduate Professional qualification of a recognised university/institution in Design (Specialisation in Product Design/ Industrial Design);

iii) Independent Professional/published work of high standard; and

iv) At least 10 years' experience in professional/teaching/research work, in a faculty/responsible position, in Industrial Design/-Product Design, with abilities to conduct and guide research and/or undertake design/development work.

DESIRABLE :-

i) Membership of professional body of Industrial/Product designs.

ii) Specialisation/research experience in certain areas/subjects of Industrial/Product Design such as furniture, building products etc.

The prescribed age and qualifications are relaxable in case of candidate of professional/academic eminence.

Service conditions and Benefits: The post carries benefits of C.P.Fund-cum-Gratuity/ G.P.Fund-cum-Gratuity-cum-Pension and Central Government Health Scheme Servicess on appointment. The period of probation is one year. Allowances are as admissible to comparable posts in the Government of India.

The rules of consultancy practice are under revision. Appointees will be governed by the revised rules, when made applicable and amended from time to time. Till then the appointees will be permitted to undertake institutional consultancy work only.

Procedure for applying: Application on prescribed form accompanied by attested copies of certificates and testimonials and a crossed Indian Postal Order of Rs.5/- (non refundable) as the application fee (SC/ST candidates are exempted from the payment of the fee) in favour of School of Planning and Architecture, New Delhi payable at New Delhi Post Office should reach the Registrar of the School by 30th December, 1987. Request for form must be accompanied by self-addressed un- stamped 25cm x 12cm envelope. Applicants who are in the employment of Government/Semi-Government undertaking/autonomous body must send their applications through proper channel.

Candidates from outside Delhi called for interview will be paid IInd class railfare for both the journeys (within India).

Sd/-
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New Delhi 110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU
Printed by Navjeevan Press (P) Ltd at Navjeevan Printers, 1-E/2, Jhan

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University News

MONDAY, DECEMBER 21, 1987 Rs. 1.50

South Zone Vice-Chancellors' Meet at Anna University, Madras. (Report on Page 7)

PONDICHERRY UNIVERSITY

SCHOOL OF MANAGEMENT

Admission to Two-Year M.B.A. Programme—1988-90

I. Applications in the prescribed form are invited for admission to MASTER OF BUSINESS ADMINISTRATION Degree (M.B.A.) Course of the Pondicherry Central University beginning from July, 1988 as approved by the University Grants Commission and the All India Board of Management Studies of the Government of India.

The School, which is committed to excellence, offers M.B.A. (Master of Business Administration) with specialisations possible in :

- (a) Marketing
- (b) Finance and Portfolio Management
- (c) Computer Systems Management
- (d) Human Resources Management
- (e) Public Systems Management

(**Note** : This year we are exclusively offering a programme on Public Systems Management as a number of Corporate bodies in the Public Sector have requested us).

The M.B.A. Programme of this School of Excellence will be highly innovative and placement-oriented. A Placement Cell with a Full Time Placement Officer is available at the School, which helps the students make intelligent and judicious career choices.

Top quality Faculty (Full Time & Part Time) drawn from quite a few top Universities are with us.

The School is on the threshold of a French Collaboration shortly.

II. Eligibility

Graduates of any discipline with an aptitude for Management Studies from any recognized University can apply. Those who are appearing for final examinations in March 1988 can also apply if they are confident of creditable Success.

At the time of actual admission on 15th July, 1988, Original or Provisional Degree Certificates or Pass Certificates for the Degree from their respective Universities or Colleges would have to be produced positively. Failure on the part of the candidate to produce these Certificates will automatically lead to the cancellation of the seat.

III. Applications

Prescribed application forms can be had on written requisition from The Dean, School of Management, Pondicherry Central University, "Invocation", Post Box No 153, Padmini Nagar, Pondicherry-605 012, by sending an oblong size (30 cms x 12.5 cms) Self Addressed Stamped Envelope with stamps for Rs. 4, along with a Demand Draft for Rs. 100/- (Rupees one hundred only) being the combined fees for Application and Entrance Exam (Rs. 33/-for SC/ST) drawn in favour of Finance Officer, Central University, Pondicherry on any Nationalized Bank payable at Pondicherry. Cheques/Postal Orders will not be accepted. People can get applications only by Post and not in person.

Last Date for Completed Applications

Last Date : **2nd February, 1988** (2/2/ 1988)

Applications should be sent by Registered Post with Acknowledgement Due only so as to reach the undersigned on or before 2-2-1988 positively. Late or Incomplete Applications in any respect will be rejected. Blank Applications are available from 1st of December, 1987 onwards.

IV. Reservation

Reservation of seats will be made for SC, ST and Handicapped candidates as per rules.

V. Selection Process

Candidates will be selected on the basis of **Pure Merit** as assessed by an Entrance Examination on Gmat Model, to be held at Pondicherry on Sunday the 28th February, 1988, followed by a Group Discussion-cum-Interview at Pondicherry in June 1988, by an Expert Selection Committee.

The batch of candidates for which this Advertisement relates will have to join the Course on 15th July, 1988 alongwith their Degree and other Certificates.

School of Management
Central University
'Invocation'
PONDICHERRY-605 012

Dr. M.T. Thiagarajan
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UNIVERSITY NEWS

VOL. XXV DECEMBER 21
No. 51 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Some Unethical Practices in Research Programmes

J.N. Kapur*

Introduction

Research should be an exalting and ennobling experience. Every research worker is a seeker of Truth. When the goal is as noble as Truth itself, the means have also to be as pure and noble. As such there should be no place for unethical practices in any research effort.

However one great incentive for research for many individuals is not search for truth; it is rather the possibility of advancing economically and socially through research. As such research also becomes an economic activity in which each individual may try to maximize his gains from a given effort or minimize his efforts for a given gain.

In India, we had great traditions of dedicated research. Before independence, research was undertaken by relatively few persons, but they were invariably dedicated individuals who undertook research activities in spite of great handicaps and achieved remarkable results, considering the meagre facilities they had. After independence, when vast sums were released for research by the government and when promotions in the university system became dependent mainly on research, some unethical and corrupt practices began growing and have now reached serious proportions in some cases. Unless these practices are fought and resisted, these are likely to do a great harm to our educational and research programmes.

The first step is that the community at large and the research community in particular should be aware of these unethical practices which are corroding our research programmes. The government, the UGC and the universities can take action, but the most important step is the building up of a strong public opinion which looks down upon and even condemns such unethical practices in no uncertain terms.

In addition to economic incentives, research has also a 'prestige' incentive associated with it. One way of fighting unethical practices is to associate a 'negative prestige' with these practices.

We discuss below some practices which we consider as unethical or at least unscientific. Some of these also tend to lower the standard of research.

Appointment of Research Supervisors

In some universities, a teacher who has seven years postgraduate teaching experience becomes qualified to guide research students irrespective of the fact whether he has himself done any research or not. Sometimes such a person may have a Ph. D. degree, but may not have any research publication to his credit. These persons also become qualified to examine Ph. D. theses. With their influence in university bodies, they can have 'convenient' examiners for their students and can thus 'produce' a large number of Ph. D's.

In some universities, members of the boards of research studies do

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**Indian Institute of Technology, New Delhi-110016* not allow a student to be registered for Ph. D., unless one of the members of the board is taken as a co-supervisor, though the member may not know even the A B C of the field in which the student intends to work. Later these co-supervisors claim that they should be made professors on the basis of the number of Ph.D. theses they have 'guided'.

Many universities insist on an internal guide when the real guide happens to be outside that university system for administrative reasons. Some universities even insist on a guide from the University department when the real guide happens to be from a college of the university itself. This is apparently done in the interest of the students and for convenience of the university office. However, persons who do not contribute to the thesis academically may be given some designation other than that of supervisor or guide or adviser. The ethical problem arises when such supervisors claim these students as their Ph.D. students and even fail to mention the names of the real guides.

In many cases, a reader in a university may himself request his own professor to be a guide, though he himself will be doing all the guidance. He does this in order to get some favours from his professor. This is called 'respect', but it is academic bribery.

In one university, a brilliant lecturer had been a co-guide with his professor for five students. I knew that the professor was inactive in research. In the selection committee interview, I asked the lecturer how much guidance he had given. The lecturer decided to keep silent, but his vice-chancellor told me that he knew that this lecturer had done all the work. He would not have been given any student, if he did not agree to be co-guide and do all the guidance; in fact in that case he would have been harassed. He said he was trying to overcome this evil, but he was not succeeding because even the victims were not cooperating, since the harassment could start again after the vice-chancellor left. He also said that the rotating headship did not matter, because in this practice all the senior persons were equally guilty.

Examination of PhD Theses

PhD theses are very often examined by persons who have done no research in the fields of the theses or who are at least not currently doing any work and as such are not themselves familiar with current literature on the subject. Very often they are distinguished professors who are appointed by the vice-chancellor because of their standing in a broad field. A professor may be a great mathematician, but this does not mean that he can examine a thesis in any branch of mathematics; in fact it is possible that he may be completely ignorant of certain branches of mathematics. However, a vice-chancellor when he appoints an examiner chooses a reputed professor in preference to a person who may have worked in the field. Sometimes the supervisors themselves recommend such names and vice-chancellors fall in the trap. Since these professor do not know the subject well and are otherwise very busy, the candidate gets the benefit of doubt and gets the degree.

As a vice-chancellor of a university, I had the chance of reading all the Ph.D. theses reports received in the office. Forty to fifty per cent of these reports simply summarised tables of contents of theses and said that the candidates had done satisfactory work and they should be given the degrees. Apparently the examiners had not gone through theses. About forty per cent had turned over the pages, noticed three or four points and commented on them. Only twenty per cent of the examiners really went through the theses as carefully as was needed. In many cases, the examiners criticized the theses, but still recommended that degrees may be awarded on the basis that the candidates had apparently put in hard work. If the theses examination reports are made public, at least after the degree has been awarded this may lead to some improvement in the quality of examination of Ph. D. theses. If in foreign universities, the names of all examiners are given on each thesis, it should also be possible to do so in India. There the examiners are careful and insist that all errors in the thesis are corrected before it is placed in the university library, since the examiners can themselves be held responsible for any serious errors there.

The theses viva-voce examinations are still held behind closed doors in some universities, though in most universities these are open. In one closed door viva-voce examination, it was found that the candidate had simply neglected some important data which was inconveniant to him and the examiner naturally wanted to reject his thesis on this ground. The supervisor however begged and pleaded for the candidate and made it impossible for the examiner to get up without accepting the thesis. When it came to my notice as vice-chancellor, I black-listed the supervisor and made all viva-voce examinations open with immediate effect.

In the closed-door viva-voce examinations of some of my own students, I met examiners who did not know any thing about the subjects in which they had examined the theses. When I asked them as to why they had examined the theses, they said, "Sir, they were your students, we knew that the theses must be all right, so we accepted". This is a fact that many times the theses are approved on the basis of the names of the guides alone.

The manipulation of data is another corrupt practice in many theses. I know of one social science and one medical science case in each of which the candidates could complete the study of only half the cases and on the advice of their supervisors, they simply multiplied all observations by a factor of two. The cases were detected because all their observations were in terms of even numbers. In scientific experiments the data are some times manipulated to fit certain theories. The training for this corrupt practice very often starts in school and college laboratories where the teachers may not be very strict about scientific integrity. In scientific research or for that matter in any research, integrity is the soul of research.

Many theses contain large experimental data or computer calculations. No examiner can possibly check the experiments or verify the calculations. The responsibility of the supervisor in these cases is quite heavy.

Publication of Research Papers

'Publish or Perish' pressure is tremendous on all research scholars and scientists and many malpractices have grown up.

(i) Most papers published by Ph.D. students bear the names of the thesis supervisor as first author. In some cases this may be justified since the supervisor may have given the problem, the method of attack and may have even prepared the final draft. However in many cases, the students work on their own, the thesis supervisor may not know what is in the paper. Yet his name is there. Here great care has to be taken to give due credit to the student and the student should be encouraged to write independent papers. There are cases where all papers of a professor are with his Ph. D. students. This can have an implication that all his papers are of Ph. D. level only. In fact it is equally important that supervisors write some independent papers on their own also.

(ii) In some laboratories, the names of heads of laboratories and names of heads of groups are written as authors on all papers written by scientists in that group, on the basis that the administrative heads provide all facilities for the work. If the arguement is carried to its logical conclusion, then Prime Minister should be one author of all papers published in India. Sometimes the authorities may not be keen on the names, but the scientists thereby want these names to ensure acceptance of the papers for publication and to get other favours from the authorities. This is an equally unethical practice.

(iii) Sometimes influential scientists get large grants from government funding agencies and use these to hire bright students as research fellows to write papers for them. These scientists spend most of their time in national and international meetings, yet continue to appear as prolific research workers.

(iv) Some non-resident Indians getting grants from their own foreign agencies are ready to hire bright Indian scientists to write papers as joint authors.

(v) A number of journals both in India and abroad now charge page-charges or reprint charges and thereby make it more difficult for scientists from poorer institutions to get their papers published and make it easier for persons with resources and grants to get their papers published. In fact the proportion of papers by foreign authors in some Indian journals has increased, not because these are always better papers, but because these authors find it very cheap to get these papers published in India and pay for these.

Assessment of Research

Assessment of research is done by selection committees in universities and research laboratories during appointments and promotions, by funding agencies at the time of giving grants and by national academies when electing fellows and awarding prestigeous prizes. It is important that assessment should be as unbiased, as objective and as fair as possible and should not be influenced by unacademic or unethical considerations.

Assessment of research is a very difficult and time consuming task. In most cases, 'experts' are given 5-15 minutes to assess a person's merits and this includes his research. In some cases, only the numbers of 'publications' of a candidate is given, in other cases, his list of research papers may be given, in some cases, opinions of experts nominated by the candidate are available; only in very few cases opinion of independent experts are available.

The number of publications is no guide, since these publications may inculde 'abstracts', 'reviews', papers at conferences, papers published in in-house journals, papers published in non-referred journals and so on.

(Continued on page 6)

Higher Education Overseas

Higher Education in Belgium

Absolute freedom of education is guaranteed by the Belgian Constitution. Article 17 of the Constitution reads *inter alia* :

> "Education shall be free; any preventive measure is prohibited; the repression of offences shall be a matter for the law alone. Public education given at the expense of the State shall also be subject to the law".

The organisation of educational establishments may not, therefore, be subjected to any restrictive measure. Thus it is possible to establish schools which are in no way connected with the official authorities. However, schools wishing to grant recognised diplomas and obtain State subsidies must conform to legal and statutory conditions.

There are two educational networks : the official State network, which accommodates 43% of all school children, and the "free" network (mainly denominational, principally Catholic) which accounts for 57% of all school children. This latter network is also financed largely by the State.

Compulsory school attendance was first introduced in Belgium by the law dated 19th May 1914, but could not be implemented until the end of World War I, in 1919. It was then compulsory to attend from the age of 6 until the age of 14.

The law dated 29th June, 1983 extended the period of compulsory attendance. Without distinction between Belgian and foreigners, this law prescribes that the minor shall be subjected to compulsory school attendance during a period of twelve years, starting with the school year during which the child reaches the age of six and ending at the end of the school year during which he reaches eighteen years of age.

Compulsory school attendance is full time until the age of 15/16 and includes primary education, which normally lasts for six years, but may last for seven, according to the pupil's needs; even for eight years in exceptional cases, and at least the two first years of full-time secondary education; full-time compulsory attendance is not extended beyond the age of sixteen in any case.

During the period of compulsory school attendance education is provided free; no financial contribution may be required from parents, and the State pays part of the cost of classic school supplies requirements.

Higher education comprises :

—University education;
—8 types of higher non-university education, viz.:
- technical higher education;
- higher education in economics;
- agricultural higher education;
- paramedical higher education;
- higher education in social studies;
- artistic higher education;
- pedagogical higher education;
- maritime higher education.

The essential task of university education is to conserve, dispense and advance scientific progress. University teaching and research are closely linked.

The principal aim of higher non-university education is to dispense scientific knowledge and its application in the various professions.

Each of these types vf education has its own particular goals, which determine the different structures and teaching methods. Higher education is organised in cycles and study years.

University Education

University education is organised in establishments which have the status of University or assimilated establishments.

—The French Community includes 4 universities and 6 University Faculties, in which the education is limited to a certain number of disciplines.

—The Flemish Community includes 3 universities, 3 University Centres (which together constitute the University of Antwerp), and two University Centres in which the education is limited to a certain number of disciplines.

Each of the complete Universities includes at least the five traditional faculties (philosophy and literature, law, science, medicine and applied science) plus a variable number of schools or institutes which organise courses in other disciplines (agricultural science, history or art, archaeology, oriental studies, commerce and economics, social and political sciences, criminology, psychology and educational science, etc.).

The characteristic feature of university education is that the studies are quite stringently sub-divided. Each study period or cycle is confirmed by the award of a degree to the student, which is a requirement for admission to the following study cycle.

The first university degree is usually that of candidate, obtained after two or sometimes three years. This constitutes the essential basis for the continuation of studies. The second degree, that of Licentiate, which is obtained after two or three study years includes specialised instruction and the submission of a thesis at the end of the course. The second degree carries the automatic title of Doctor, Pharmacist or Engineer in certain disciplines, but in this case it is awarded after a longer period. Second cycle degrees usually qualify the holder to practice a profession.

Access to teaching posts in secondary education is subject to the possession of a supplementary degree, that of qualified teacher in higher secondary education, which may be granted immediately upon the award of a Licentiate degree.

The teaching at these levels comprises lecture courses, practical exercises and supervised work.

The third degree, that of Doctor, may be obtained no sooner than one or two years after the award of a Licentiate degree. The examination involves the presentation of an original dissertation and an accompanying thesis which the candidate must justify in public. The doctorate may be prepared only by candidates who are considered to have an aptitude for personal intellectual work and scientific research.

The highest degree in the hierarchy is that of Professor in higher education. This degree may be obtained no sooner than two years at least after the candidate has obtained the corresponding degree of Doctor. It involves the presentation and justification of an original dissertation and three theses or additional questions chosen freely by the candidate, together with an oral lesson on a subject indicated by the jury.

University degrees are divided into three major categories: legal degrees, scientific degrees and complementary degrees.

The legal, or academic degrees are awarded for studies in which the conditions of admission, the programmes and the duration are fixed by law. They qualify the holder for practice in the liberal professions, such as the bar, magistrature, medicine.

Scientific degrees are awarded for studies where the conditions of entry, the programmes and the duration are fixed directly by the university, apart from any legal or statutory conditions. These are mainly university studies which have developed in addition to the traditional faculties, to cater for new demands and which concern such extremely varied fields as : economics, sociology, psychology, pedagogy, criminology, oriental philology, physical education, geology and political science.

Whether degrees are legal or scientific, the university studies for which they are awarded are usually organised in the same way (candidature, licentiate, doctorate).

Additional or complementary degrees are usually awarded for specialised postgraduate studies carried out after the licentiate or doctorate qualification. They are awarded by the universities under conditions which the latter are free to choose. They are therefore similar in nature to the scientific degrees mentioned above.

Higher Non-University Education

Higher non-university education covers an extremely wide field, in preparation for various occupations, mainly those in industry, commerce, transport and agriculture, together with the medical auxiliary and sociological professions, teaching, translation and interpreting, applied arts and the media.

This type of education may be either short-term or long-term. Short-term higher education consists of a two, three or even four year study cycle.

Long-term higher education is of university type and level; it consists of two cycles and is of at least four years duration.

Both short and long-term courses are given in five sections (higher technical, higher economic, higher agricultural, higher artistic and higher pedagogical).

Non-university higher education confers, in particular :

—graduate diplomas (in various disciplines) as mid-wife, nurse, social worker, librarian, archivist, nursery school teacher, primary school teacher, lower secondary school teacher...in the short-term type;

- diplomas and qualifications as industrial engineer, licentiate, commercial engineer, teacher in higher secondary education and architect, in the long-term type.

The short-term higher education cycle consists of a study programme which gives scientific and technical training leading to a professional qualification in a specified field.

Long-term higher education consists of an initial cycle of general theoretical and scientific training, in preparation for a second specialised cycle, at the completion of which the student has to submit and justify his personal work (thesis, project and/or studies work).

Both types of higher non-university education include theory, exercises, practical work, laboratory work, theses and practical training courses.

Certain long-term higher education economics courses may be organised on an evening-class basis. In this case, the programme is spread over a longer period and is comparable to the same course on a day-school basis. ☐

[*Courtesy* : Belgium Embassy, New Delhi]

Some Unethical Practices in Research Programmes

(Continued from page 3)

In one case I was given the information that a candidate had 50 publications and had guided 15 Ph.D. theses. This looked impressive. On critical examination, I found that 40 of these publications were 'abstracts' sent (and rarely presented) at conferences, 5 were popular articles and there were only five research papers published in his own university journal published by the candidate and 15 of his Ph.D. students. From ten theses, no paper had come out. All the theses were examined by three common examiners only.

The list of papers should indicate clearly; (i) which papers are independent and which are joint; (ii) if joint, which papers are with students, which are with colleagues and which are with seniors; (iii) which papers are published in referred/unreferred journals; (iv) which are published in proceedings of conferences; (v) which are just presented and not published; (vi) which papers have received good reviews; (vii) which papers have been referred to by other authors and how often; (viii) which have found places in textbooks.

This list together with reprints of five to ten of the best papers of the candidate should be sent to at least four independent experts in the special field and their opinion should be obtained in advance. Since this referring will be an onerous task, the referees may be even paid an honorarium for this work.

These experts' opinions together with the list should be placed before the final selection committee which should be asked to give its own assessment in writing.

The present system of fifteen minutes assessment in which three or four experts ask questions, go through lists of papers, reprints of papers and pronounce their judgements is highly unfair and is responsible for the large scale dissatisfaction with the entire assessment procedure. This dissatisfaction is being exploited by those who do no research or do trivial research to urge the abolition of the assessment system itself and its replacement by automatic promotion. This has also led to a widespread feeling that for earning promotion and awards, one needs more political pressures than merit. Vested interests are against the much-needed reform of the assessment system. An almost fool-proof system of assessment of research can be developed and should be developed for the sake of quality in our educational and research organisations.

Research Freedom, Joy and Openness

Research should be done in freedom and should lead to joy. There should be no secrecy, at least about university research. The research process should be made as open as possible. With computers at our disposal, it should be possible for anyone to find the research work done by anyone else. It should not be possible for anyone not to do any research for ten or fifteen years and still pose as a great scholar. Similarly it should not be possible for any one to remain unnoticed if he has done good work even if he has no god father.

We should weed out all corrupt practices from the field of research firmly and ruthlessly. Detailed guidelines, more openness of the system, more accountability of decision makers and a strong public opinion are necessary. Ambitious research goals and high academic ambitions are also necessary. ☐

South Zone VCs Meet

Association of Indian Universities (AIU)'s Meeting of the Vice-Chancellors of the South Zone was held at Anna University, Madras on 5-6 December, 1987. Prof. K. Satchidananda Murty, Vice-Chairman, University Grants Commission, inaugurated the meeting. In his Inaugural Address Prof. Murty highlighted various measures that the UGC had recently taken to improve the functioning of the Universities. He made a particular mention of streamlining the procedure for approval of proposals from the universities by making the Vice-Chancellor and few senior professors from the university to discuss their proposals with the UGC and its experts; Creation of central facilities in special areas at a few selected places in the country to enable the universities to have direct access to these facilities for better utilisation and maximum return on investments; Grant of autonomous status to a number of colleges; Recognition of a number of departments under the DSA, COSIST and CAS programmes; Liberal financial aid for improvement of physical education programmes and institution of degree courses in sports; Revision of pay-scales of teaching and non-teaching staff; Simplification of procedure for sanctioning building grants to the universities; and enhanced UGC support of the order of Rs. 100 crores for tackling obsolence in laboratories and libraries. Prof. Murty was of the view that the appointment of Vice-Chancellors should be made on a rational basis by selecting able academicians from universities themselves. The Vice-Chancellors, he felt, could be appointed on a rotational basis among the senior professors. He also pleaded for a distinction to be drawn between university administration and business or public administration. The latter was not relevant for universities which are purely academic or research bodies and have no commercial orientation. An administrative pattern to suit the universities needs to be evolved, he added.

The Meeting was conducted in six sessions with the following themes :

Session I—University Finances.

Session II—State Council of Higher Education.

Session III—University Administration.

Session IV—Autonomy for Colleges and University Departments.

Session V—Affiliated Colleges—Role of University in their development.

Session VI—General Issues like Academic Staff Colleges, Restructuring of Courses, Linkage of University Manpower with Economic Development, Common Reserve and Research Centre, etc

Session 1 : University Finances

Dr. V.C. Kulandaiswamy, Vice-Chancellor, Anna University introducing the subject said that a substantial part of support for higher education comes from State Governments for most of the Universities and the Centre, even though vested with the responsibility for higher education is extending only a limited plan support—in the case of State Universities. State Governments have generally set apart about 25% of their budget for education whereas it is only 1.4% by the Centre and this needs to be enhanced.

The following points emerged from the discussions :

1. Criteria for funding Universities need to be established.
2. Allocation made by the Central Government on Block grant basis for education should clearly earmark the funds for higher and technical education as well.
3. Private sector should be encouraged to come forward to support higher education. Establishment of endowments or special chairs could also form part of the support activity. The tax exemption policy of the Government should be liberalised to encourage private donations.
4. Consultancy, research and other academically relevant remunerative measures could be taken up by the Universities to augment revenue.
5. There is a scope for raising the tuition and examination fees of the students. While the well to-do sections can be made to share the extra burden, the poorer sections could be subsidised suitably by the Government. This has to be viewed in the context of the UGC itself allowing a limit for tuition fees at Rs. 8000/- per annum per candidate in the case of self financing institutions, while prohibiting capitation fee.
6. Benefits available for industries by way of long term soft loans should be extended to the Colleges and Universities as well.
7. UGC can prepare a model budget based on which new Universities could be established.
8. State Government could raise sizeable funds exclusively to

support Universities as is being done in Karnataka.

9. There should be a firm commitment on release of funds in time as matching grant from State Governments whenever funds are released by UGC.

10. Universities should be involved in collaborative research with the Defence Department which does not involve any security risk.

11. There shall be a built in provision say 5%, in fund allocation to take care of inflation in the non-salary component of the University budget.

Session 2: State Council of Higher Education

The important role played by the State Governments in funding not only the State Universities but also the affiliated colleges was stressed. The State Council for Higher Education which must be a professional body of eminent educationists will have the primary objective of formulating higher education policies level, coordinating and channelising funding from the State at State for higher education. Its role in relieving the Vice-Chancellors of the need to be in constant touch with Secretariat Departments for funds was also highlighted.

The composition, powers and functions, finances of the proposed State Councils and their relationship to U.G.C., State Governments and universities were discussed in detail.

The following salient points emerged from the dicussion in the session:

1. The States have an important role to play in the implementation of programmes in higher education and the setting up of the State Council for Higher Education is a pre-requisite for fulfilling their obligations. Accordingly, the meeting stressed the need for formation of State Councils of Education consisting of eminent educationists.

2. The Council should have a full time Chairman and full time/part-time Vice-Chairman.

3. Both Chairman and Vice-Chairman must be eminent educationists with considerable working experience in higher education and research, and preferably with the experience of having served as Vice-Chancellors.

4. The State Governments must allot adequate funds specifically for higher education in their plan proposals. These funds must be placed at the disposal of the State Council of Higher Education for disbursement to Universities and development projects of colleges and institutions of higher learning.

5. The State Council must be a body to assist and facilitate the Universities and affiliated colleges in their functioning and should not degenerate into an additional administrative hurdle.

Session 3 : University Administration

Dr. A. Gnanam, VC, Bharathidasan University, initiated discussion on "University Administration: Authorities : Officers : Their Functions". He briefly reviewed the lacunae in the present University administrative system. A desirable system of administration should help promote efficiency and productivity with in-built flexibility incorporated in the system. At present, there are three bodies in Universities (i.e) the Syndicate, the Senate and the Academic Council (or their equivalents) with overlapping powers, functions and composition. The Senate, usually being a very large body with members drawn from diverse fields, is not always able to make effective contribution in matters pertaining to University administration and needs to be pruned to a manageable size, not exceeding 50. He also suggested the creation of the post of Pro-Vice-Chancellor to assist the Vice-Chancellor in running the administration. He stressed the need to increase the tenure of the Vice-Chancellor to five years from the present three years with or without provision for re-appointment. He presented a model of administration for Universities which provides for elimination of Academic Council. He outlined the need for (adhoc) advisory committee and a curriculum development cell under an expert, in place of Academic council or Board of Studies.

The following points were made during the discussion:

1. The need for having a statutory Planning Board for each university was stressed.

2. It was observed that if a Pro-Chancellor is the Minister incharge of Higher Education in the State, he acts as a vital link between the legislature and the Univerity without actually interfering with the functions of the University. At the same time, he takes responsibility to protect the interests of the University at the legislature. There is thus a need to have such Pro-Chancellors.

3. The Universities have two prime responsibilities: Undergraduate/postgraduate teaching and research. In the case of affiliating Universities, these become very difficult since they should pro-

vide for development of University departments also besides taking care of the interest of the affiliated colleges. There is therefore an urgent need to restructure the entire administrative system of the University.

4. The Academic Council, being a body consisting of a number of experts drawn from different fields of activity, can take a broader view of the problem whenever issues are brought for discussions. The kind of representation in it is very important. Only highly qualified, non-political people, should be represented in the Academic Council.

5. The present system of Vice-Chancellor and Registrar being the only two officers of Universities with statutory executive powers and functions is not conducive to the effective functioning of Universities. A number of senior academic positions such as Deans, in the University administration, with special areas of responsibility and powers, reporting directly to the Vice-Chancellor and Syndicate, will be desirable.

6. There was a general consensus with regard to the reduction of the size of the senate.

Session 4 : Autonomy for Colleges and University Departments

Prof. T. Navaneeth Rao, VC, Osmania University, who chaired the session, outlined the need for autonomy, the criteria for selecting the Colleges for autonomy and the problems coming in the way of giving autonomy to colleges The New Education Policy formulated by the Government of India envisages decentralisation and conferring autonomy to Colleges and Universities which will go a long way in achieving excellence in education, improving standards and imparting education relevant to the needs of the society. In the traditinal system, the Colleges are of the affiliated type where formulation of syllabi, conduct of examinations, etc. are decided by the University. The accuntability of the College is indirect and through the University, and the Colleges do not enjoy academic freedom. In recent years, the number of Colleges has increased substantially and the Universities find it difficult to manage such a large number of colleges. Local problems of colleges snowball and affect the performance of the University as a whole. There is no scope in such a set up for innovation, creativity and to achieve participation by the teaching community. Curriculum, generally, does not take into account the local requirements. Autonomy gives the college a sense of staus, ensures maximum utilization of individual potentialities, avoids costly and unnecessary duplication of work, meets the educational needs of the locality and makes teachers participants and not mere passive observers. Autonomy need not be merely confined to affiliated colleges but could also be extended to the University departments as well. The selection of the departments for conferment of autonomy can be based on their performance and recognition by UGC under COSIST or other programmes. This will help improve the performance of the departments and enable them to grow into Centres of excellence. Conferring autonomy for colleges is however opposed on the apprehension that it will lead to non-co-operation of teachers because of their unwillingness, fear and apathy; Introduction of elitism in higher education; Lack of time to devote for extra-curricular and other activities, and Lack of mobility of students and staff.

However, these problems could be overcome, once the principle of autonomy is accepted and is implemented wholeheartedly. I.I.T.s I.I.M.s which are autonomous bodies are examples of how autonomy can confer qualitative improvement to education.

The session was thrown open for discussion and the following points emerged :

1. The reforms be brought about with caution and steps taken to remove whatever misgivings there may be in the minds of students, parents and teachers.

2. The target of 10% of the colleges for granting autonomy during the VII Plan is a very modest one and this may be achieved by giving autonomy to the colleges.

3. An autonomous college is also an affiliated college and is bound by whatever stipulations the University might prescribe as part of granting of autonomy.

4. The University should periodically review the curriculum, syllabi, the conduct of examinations and the evaluation of candidates to ensure that satisfactory standards of instruction and training are maintained.

5. The autonomous colleges are bound by the same rules and regulations with regard to reservations either in the admission of students or in the recruitment of faculty as may be indicated as the policy of the State Government or by the University.

6. The apprehensions expressed by the members of faculty that

the grant of autonomy may be made use of by private managements in a manner that may be detrimental to the terms and conditions of service of the members of staff were noted. However, the University that grants autonomy has to ensure that this academic freedom given for a duly academic purpose is no way abused.

7. The kind of flexibility that autonomy provides for teaching, for diversifying the curriculum and syllabi and for making the education and training socially and economically relevant was emphasised.

Session 5 : Affiliated Colleges

Dr. R. Subbayyan, VC, Bharathiar University, initiated the discussion and chaired the session on "Affiliated Colleges: Role of Universities in their development". He highlighted the need for a better interaction between the Universities and affiliated colleges and stressed the joint responsibility of University authorities, University and College teachers, and college management to develop an excellent system of interaction to help the affiliated colleges in their development. It is imperative that the University departments should have all the relevant details required to assist the colleges in their development with respect to library, laboratory, equipment and curriculum development. He said that each University should have; (i) a College Development Council which would regularly visit the colleges, help them in their development work and liaise with the UGC on behalf of the colleges; (ii) an Academic Staff College to update the subject knowledge of teachers and teaching methods: and (iii) a Curriculum Development Cell to devise new courses and update the contents of existing courses.

The meeting took note of the fact that, on an average, more than 85% of the undergraduate students and 55% of the post-graduate students in the country are in affiliated colleges. There are certain States where the percentage of the post-graduate students in the affiliated colleges is much larger than the national average. In Tamil Nadu, it is obout 80%. In other words, higher education is really concentrated in the affiliated colleges and its quality will depend upon the quality of instruction and training, infrastructural facilities and the faculty available in affiliated colleges. The universities have to concern themselves with the issues connected with the development of affiliated colleges.

The following suggestions were made during the discussion on the subject:

1. The Universities recognise that the affiliated colleges must be made an important component of the University system and the Universities have to play a leading role in the development of these institutions.

2. It may be possible for some of the University faculty members to give lectures in the institutions which are located in the neighbourhood of the Universities on a planned basis. The Universities may also enable some of its faculty members to go to affiliated colleges located away from the University and give the benefit of the knowledge to the students. Such arrangement will not only help the students but also the staff members in their research and development activities. They can have discussion with the University faculty in the areas in which they work.

3. The College Development Council must be strengthened and should be treated as the most important unit of the main office of the University. This office should have all necessary documents with regard to programmes of UGC and Ministry of Human Resource Development and other agencies which may be funding the programmes for higher education. Wherever possible, these documents may also be made available to affiliated colleges.

4. The College Development Council should initiate steps to ensure that the Principal and senior members of the faculty of the colleges are informed of the programmes of assistance available and also given help in initial stages in going through necessary formalities for getting the benefits and assistance. The Universities may also advise the colleges to take advantage of the various training programmes that are available in the country.

5. It is vital to maintain the standard of instruction in the colleges. In view of the crucial role that Principals will have to play in implementing programmes of higher education, it is necessary to restore to the position of Principal the kind of authority and responsibility that it once enjoyed in the not too distant past.

Session 6: General Issues

During the Sixth Session the following issues were discussed :

1. Academic Staff Training College
2. Non-teaching staff in University Administration

3. Common Resource and Research Centre

4. Re-structuring of courses

5. Linkage of University manpower and Research work with economic development of the State and the region.

The following three recommendations emerged after the deliberation at the Meeting.

1. Just as there are criteria and general norms for recruiting teaching staff based on the student-staff ratio, it is necessary to develop a non-teaching staff to student ratio for recruitment of non-teaching staff.

2. The idea of creating a common resource/research centre in different regions of the country is welcome. Before taking up this as a fresh venture, the existing resources such as books, journals, equipment and research facilities of the different institutions in the major cities be networked, so that effective utilisation of available resources can be made.

3. The Meeting, having reviewed the proposal of UGC to restructure the courses, feels that many proposals submitted under this head for financial support are pending with UGC and requests the UGC to expedite clearance for the same.

M.Tech. in Atmospheric Sciences

Poona University has decided to offer an M. Tech. programme in Atmospheric Sciences from the next academic session. It will be conducted by the Department of Physics and is being offered for the first time in the country.

The M. Tech. programme is aimed at imparting "in depth" teaching of the fundamentals of meteorology and atmospheric processes and will also provide post-M.Sc. specialisation in atmospheric science. It is a broad based training programme with a balanced approach to theoretical and experimental aspects of modern techniques used in atmospheric research. Adequate emphasis has been given to computer-aided weather modelling, digital instrumentation and microprocessor-based instrumentation.

Vedic Maths for Computer

Shri P.V. Narasimha Rao, Union Minister of Human Resource Development, has informed Lok Sabha that the recently set up Rashtriya Ved Vidya Pratishthan (National Foundation for Vedic Studies) had been asked to prepare a project to examine the applicability of ancient vedic mathematics to modern computer calculations. This, he said, was decided after researchers at the California University found out that Indian mathematicians of the vedic period knew and successfully employed the binary and other numbers which formed the basis of the modern computer concept.

Mr. Rao said the Pratishthan, primarily set up three-four months ago, would try to relate the Vedas, the Vedangas and Upvedas to modern times. He said the great temples of India which have 'stood the test of time' demonstrated the precision of vedic mathematics employed in their complicated design and architecture.

Vedic mathematics was 'rediscovered' in 1961 when the Sankaracharya of Govardhan proved that the 16 sutras in the vedic lore helped to simplify all complicated calculations, he added.

AICTE Bill Passed

The Rajya Sabha has passed a Bill providing for the establishment of an All-India Council for Technical Education (AICTE) with a view to ensure proper planning and coordinated development of the technical education system throughout the country. It would check the mushroom growth of technical education in colleges and improve their quality.

The Bill also seeks to provide for the promotion of qualitative improvement of such education in relation to planned quantitative growth and regulation and proper maintenance of norms and standards in the technical education system.

Dr. Ochoa Visits JNU

Dr. Severo Ochoa, an American Nobel Laureate Scientist, (Roche Institute of Molecular Biology, Nutlay, New Jerssy, USA) visited Jawaharlal Nehru University (JNU) recently. He called on the Vice-Chancellor, Prof. M.S. Agwani and held discussions with the faculty on 'Some aspects of molecular biology and thrill of discovery'. He complimented the JNU for its efforts in running the molecular biology department successfully.

Prof. Ochoa was the recipient of the Nobel prize in Physiology and Medicine in 1959. He was responsible for the discovery of a new enzyme capable of synthesizing RNA in the test tube. This enzyme was later used as a tool to break genetic code by him and one of his former students Arthur Kornberg.

News from Agril. Varsities

Pantnagar Develops New Cowpea Fodder Variety

A high yielding stress tolerant and virus disease resistant new variety of fodder cowpea UPC 5287 has been developed by G.B. Pant University of Agriculture and Technolog for general cultivation in all Cowpea growing areas of the country on the basis of its overall superior performance in different agro-climatic conditions. Planted in the first fortnight of March, it gets ready for a cut by June at a time. When there is a scarcity of green fodder the variety is capable of yielding 400 quintals fodder besides 40 quintals of dry matter per hectare.

Rich in protein, its fodder forms an excellent mixture with wheat and paddy straw, jowar, bajra, teosinte and maize for dairy cattle and other livestock. It can be fed green, as well as may be converted into good quality hay or silage, when mixed with cereal fodder.

The variety can be grown in tropical and sub-tropical climates in a wide range of soil types and is well adapted to semi-arid regions preferring temperature between 20-35°C. However loam soil is most suitable for its cultivation.

Training Course in Basmati Rice

The Department of Food Science and Technology of the Punjab Agricultural University conducted a one-week training course on the 'Inspection and Quality Control of Basmati Rice' which was attended by eleven officers belonging to Bombay, Culcutta, Madras and Delhi Centres of the Inspection and Quality Control Council of the Union Ministry of Commerce. During the course the officers were imparted training in evaluation of quality of paddy, milling properties, determination of physical, chemical and cooking attributes of different types of Basmati Rice. Special emphasis was laid on characterization of different varieties of Basmati Rice and their detection as admixtures.

Speaking in the concluding session of the course, Dr K.S. Sekhon, Professor-cum-Head of the Department of Food Science and Technology pointed out that the Indian Basmati faced a tough challenge in the International market which had to be met through stringent quality control. He said that the consumption of Basmati Rice was on the increase and besides the Arab countries which had been the traditional consumers countries like the United Kingdom, United States of America and Japan had also started consuming more Basmati Rice. Good quality Basmati Rice like Basmati 370 fetched a very high price in the International market and thus its cultivation was becoming more rumenerative to farmers, he added. Dr. Sekhon advised the participants to use their knowledge for proper inspection and quality control of consignments so that the country could exploit the export potential to its advantage

Sports News

Narasimhan to Lead Universities Rowing Team

S. Narasimhan of Madras University has been named the Captain of the Indian Universities Rowing Team for the National Rowing Championship to be organised at Madras in the month of February, 1988. The Indian Universities Rowing team shall comprise :

Scull : Ajay Gupta (Calcutta)
Asif Rehan (Osmania)

Pairs : K.M. Sridhar (Madras)
S. Narasimhan (Madras)
Shiv Kumar (Madras)

Fours : Amit Chatterjee (Calcutta)
A.F. Khan (Osmania)
Manoj Menon (Calcutta)
Sanjay Raghurao (Madras)
Arif Irfan (Osmania)
Bimal Ghosh (Calcutta)

The team will attend a coaching camp prior to its participation in the National Championship.

We Congratulate . . .

Prof. Shakeelur Rahman who has been appointed Vice-Chancellor of the Lalit Narain Mithila University, Darbhanga.

KEHKASHAN

The North Zone Youth Festival

Kehkashan—the four-day Inter-University North Zone Youth Festival was held at Aligarh Muslim University (AMU) from 21-24 November, 1987. The Festival was sponsored by the Association of Indian Universities (AIU) with financial support from the Department of Youth Affairs & Sports, Govt. of India.

AIU has been organising Inter-Varsity Youth Festivals since 1985—the International Year of Youth (IYY)--to provide opportunities to university youth to come together, breaking the barriers of religion, caste and creed; to seek a creative expression by knowing each others' culture through music, dance, drama, etc.

Kehkashan, the name given to the North Zone Youth Festival by the hosts, Aligarh Muslim University, commenced on November 21, 1987 with traditional gaiety and enthusiasm. **Kehkashan**, the milky way, a symbol of togetherness of the mightiest and the most diverse of planetary bodies, was inaugurated by Shri Syed Hashim Ali, Vice-Chancellor, AMU. 505 participants from 19 universities took part in the march past to the accompaniment of the police band. In his inaugural address, the Vice-Chancellor hailed the Festival and hoped that developing cultural ties would lead to deeper understanding of cultural exchange and strengthening the spirit of youth.

After the inaugural function the cultural activities started with the item of Quiz (preliminary) and light vocal music. In Quiz four best teams viz. Agra University, Agra, Aligarh Muslim University, Aligarh, Thapar Institute of Engineering & Technology, Patiala and Haryana Agricultural University, Hisar were selected for the finals.

The light vocal solo event started in a charged atmosphere with the auditorium jampacked with music-lovers literally on their feet. Jagdish Lal of Guru Nanak Dev University, Dawar Hussain of Aligarh Muslim University and Jitendra Singh of Jammu University received warm applause from the audience.

The second day of the Festival started with the items of western Vocal Solo, Quiz final and Fine Arts. Quiz Finals took place in the Assembly Hall of the Zakir Hussain Engineering College and Technology. There were 10 rounds including one for audio and another for visuals. 30 seconds were given to answer a direct question and half of it for the "passed-on" ones. It was a close competition and in the end, the best team won by a comfortable lead. Aligarh Muslim University and Agra University emerged as the winners.

The Kennedy Auditorium, the venue of the Western Vocal Solo, was jampacked with the enthusiastic audience. Madhubala Bhatnagar of Dayalbagh Educational Institute, Agra, followed by Amit Choudhary of C.S. Azad University of Agriculture and Technology, Kanpur, performed in front of an appreciative audience. The number "Your feelings for me" by Ishita Chaudhary of Kurukshetra University, literally took the house by strom. She was accompanied by one guitarist and a bongo player.

Sanjev Sharda of Guru Nanak Dev University, Amritsar, who echoed the number "Tides of Sentiments", was followed by "Hello", the number sung by Kusumbhar Kaushik of Jammu University. Both the numbers were very well received. The audience clapped Parvez Imam of the host university right from the beginning till the end.

The third day of the festival commenced with the One-Act plays. In all fifteen universities fielded

Group Song presented by GNDU, Amritsar their teams. The young actors from Guru Nanank Dev University presented the play "Guru Dakshina", written and directed by Mr. Arun Mehra. It revolved round the theme of political exploitation of youth, the luring and invoking their sentiments. "Is prashn ka uttar do" was staged was Maharshi Dayanand University, Rohtak. It was about the communal disturbances and depicted the demise of respect for human life, fundamentalist outlook, impulsiveness, etc. "Bhanwar" staged by the Aligarh Muslim University Drama Club has unemployment, corruption, evils of Indian politics and society in general as its theme. The play was written by F.S. Sherani and directed by Shafiur Rehman.

Haryana Agricultural University, Hisar, presented "Akhir Kyon". The theme once again was communal riots. "Madaari"—a buentiful play was staged by Punjab Agricultural University, Ludhiana. It was an effort at awakening the society in general.

"Shahar ki Sair" was staged by Agra University. Basant Rawat assisted by Rajiv Agarwal directed the play. Maharshi Dayanand University, Rohtak and Aligarh Muslim University were ranked the best.

In Classical Music, Sunita Pandey of C.S. Azad University of Agriculture & Technology, Kanpur presented the composition "Barsan laagi rey badariya" in Raag Megh Malhar, composed in 'teen taal' of 'Chhote Khyaal'. Ramakant of Thapar Institute of Engineering & Technology, Patiala, rendered Raag Malkaans in one taal of Drut Khyaal. Punjabi University, Patiala was represented by Nivedita Uppal, presenting Raag Deshi. The vilambit Khyaal of this raag was "mora man har liho". Guru Nank Dev University's Kanwar Deep presented "Ja ja re Pathuawa" and "Chalo Sakhi" in Raag Gujri. In was in vilambit & drut khyaal.

Skits took place at the Kennedy auditorium in which nine universities participated. 'Nai Kiran' was presented by the Aligarh Muslim University. It depicted existing problems of Sati Pratha and terrorism. A debatable question mark of today 'Sati Pratha' was presented by Thapar Institute of Engineering & Technology, directed by Devender Singh. It was a social satire ending with an affirmation that nobody can understand a woman. C.S. Azad University of Agriculture and Technology, Kanpur presented 'Gadha' directed by Vikas Kapoor. The theme of the skit was today's political culture. 'Rehearsal' was presented by M.D. University, Rohtak on the theme of National Integration. 'Bhai Bhai' was presented by Kurukshetra University, Kurushetra and 'Panchhi Kya Kehta Hai' was the entry from Agra University, Agra. The performance of Agra University and Aligarh Muslim University were highly eulogised and were rated the best two by the judges.

Skits were followed by Mime events. 'Slow Motion Action' by Dayalbagh Educational Institute, Agra; 'Five on a beach' by Punjab Agricultural University, Ludhiana; 'Unity, a machine' by Aligarh Muslim University; 'Panchi Ek Daal Ka' by Jammu University; 'Sangathan Mein Shakti' by Agra University; 'Samasya' by Haryana Agricultural University; 'Aadat Se Majboor' by Y.S. Parmar University, Solan; 'Three Wheeler' by M.D. University, Rohtak; 'Pedh Ugao Rashtra Bachao' by Himachal Pradesh Krishi Vishwa Vidyalaya, Palampur and 'Ek Bachaara' by Thapar Institute of Engineering & Technology, Patiala were the presentations in this event.

Classical and folk dances were conducted at the Women's College and attracted a sizeable audience. Dayal Bagh Educational Institute, Agra presented a bewitching Holi Folk Dance and was placed at number one. Performance of Kurukshetra University was also rated high. Vandana Sharma of Agra University won the hearts of the audience with her Kathak per-

Fine Arts Exhibition showing works of Talented Artistes formance. The other universities which participated in classical dance, included Punjab Agricultural University, Ludhiana and M.D. University, Rohtak.

The final day activities included Western Group Song, Classical Instrumental Solo comprising percussion and non-percussion items. Kurukshetra University and Jammu University were declared the best for the Western Group Song. M.D. University, Rohtak and Guru Nanak Dev University, Amritsar were rated best for the item Classical Instrumental Solo (Non Percussion) event. Punjabi University, Patiala and Jammu University were declared as the best in the event of Percussion Solo.

Smt. Waheeda Hashina Ali was the Chief Guest at the valedictory function and gave away the prizes to the winning contingents. The participants were also presented with a participation certificate and a commendation medal. Aligarh Muslim University lifted the overall Championship Trophy while Jammu University was declared the runners-up. □

KEHKASHAN

RESULTS

Music

1. Classical Vocal (Solo) Hindustani/Karnatak
   (i) Guru Nanak Dev University, Amritsar
   (ii) Punjabi University, Patiala
2. Classical Instrumental (Solo) Percussion
   (i) Punjabi University, Patiala
   (ii) Jammu University, Jammu
3. Classical Instrumental (Solo) Non-percussion
   (i) M.D. University, Rohtak
   (ii) Guru Nanak Dev University, Amritsar
4. Light Vocal (Indian)
   (i) Guru Nanak Dev University, Amritsar
   (ii) Jammu University, Jammu
5. Western Vocal (Solo)
   (i) Aligarth Muslim University, Aligarth
   (ii) Kurukshetra University, Kurukshetra
6. Group Song (Indian)
   (i) Dayalbagh Educational Institute, Agra
   (ii) Haryana Agricultural University, Hisar
7. Group Song (Western)
   (i) Kurukshetra University, Kurukshetra
   (ii) Jammu University, Jammu

Dance

1. Folk/Tribal Dance
   (i) Dayalbagh Educational Institute, Agra
   (ii) Kurukshetra University, Kurukshetra
2. Classical Dance
   (i) Agra University, Agra
   (ii) Punjab Agriculture University, Ludhiana

Literary Event

1. Quiz
   (i) Aligarh Muslim University, Aligarh
   (ii) Agra University, Agra

Theatre

1. One Act Play
   (i) M.D. University, Rohtak
   (ii) Aligarh Muslim University, Aligarh
2. Skits
   (i) Agra University, Agra
   (ii) Aligarh Muslim University, Aligarh.
3. Mime
   (i) Aligarh Muslim University, Aligarh
   (ii) Jammu University, Jammu

Fine Arts

1. On the Spot Painting
   (i) Kurukshetra University, Kurukshetra
   (ii) Aligarh Muslim University, Aligarh
2. Collage
   (i) Jammu University, Jammu
   (ii) Aligarh Muslim University, Aligarh
3. Poster Making
   (i) Indian Agricultural Research Institute, Delhi
   (ii) Himachal Pradesh Kirshi Vishwavidyalaya, Palampur
3. Clay Modelling
   (i) Jammu University, Jammu
   (ii) Punjabi University, Patiala
4. Cartooning
   (i) Haryana Agricultural University, Hisar
   (ii) Aligarh Muslim University, Aligarh.

Music
Guru Nanak Dev University, Amritsar

Dance
Dayalbagh Educational Institute, Agra

Theatre
Aligarh Muslim University, Aligarh

Quiz
Aligarh Muslim University, Aligarh

Fine Arts
Aligarh Muslim University, Aligarh

Overall Championship Trophy
Aligarh Muslim University, Aligarh

Runners-up Trophy
Jammu University, Jammu.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
December 21-25, 1987	Workshop on Science and Technology	To initiate a dialogue for the interaction of the Government, industry, institutes and to update the present technology.	Department of Astronomy & Space Sciences, Punjabi University in collaboration with the Punjab State Council of Science & Technology.	Prof. H.S. Gurm, Director, Department of Astronomy & Space Sciences, Punjabi University, Patiala-147002
December 23-26, 1987	XVI All India Conference of the Indian Association of Special Libraries and Information Centres (IASLIC)	To discuss the Challenges of the Emerging Information Society : National Policy Issues.	Sri Venkateswara University Library, Tirupati	Shri R. Sreepathi Naidu, Organising Secretary & Librarian, Sri Venkateswara University Library, Tirupati 517502
December 28-30, 1987	Third National Conference on Surfectants, Emulsions and Biocolloids.	To provide an opportunity to technologists and experts from academic and research institutions and industries to exchange views and discuss developments related to latest findings from active research.	Aligarh Muslim University in collaboration with Indian Society for Surface Science and Technology.	Dr. H.N. Singh, Reader, Department of Chemistry, Aligarh Muslim University, Aligarh.
December 28-31, 1987	33rd All India Library Conference	To discuss various aspects of modernisation in Libraries	Bharathidasan University in collaboration with Indian Library Association	Mr. A. Sundararajan, Organising Secretary, 33rd All India Library Association, Bharathidasan University Library, Tiruchirapalli 620023
January 3-8, 1988	Second International Colloquium on Concrete in Developing Countries	To discuss various aspects of the subject as related to the needs of developing countries.	Engineering Staff College of India, Hyderabad & Institute of Engineers (India).	Mr. R.N. Raikar Chairman, Civil Engg. Divn., Institution of Engineers (India) and Principal Coordinator 2nd ICC, 1008/9, Raheja Centre, Nariman Point, Bombay-400 021
February 5-6, 1988	National Seminar on Interaction between Institutions and Industries through Science and Technology Entrepreneurs' Parks	To provide a forum of young entrepreneurs, industrialists, scientists and educationists to deliberate on the vital issues of Industry-Institution interaction.	STEP, Roorkee and University of Roorkee, Roorkee	Prof. M.P. Jain, Organising Secretary, National Seminar IIISTEP, Office of the DRIL, University of Roorkee, Roorkee-247667
February 7-9, 1988	Mapcost Symposium on Indian Studies on Chrysomelidae and Bruchidae	To discuss different aspects of study of Chrysomelidae and Bruchidae insects.	Govt. Arts and Science College, Durg (M.P.)	The Secretary, Mapcost Symposium, Govt. Arts and Science College, Durg-491001 (M.P.)
July, 12-14 1988	International Symposium on Recent Advances in Male Reproduction	The Symposium will focus on Molecular Biology of Inhib in, Androgen Binding Protein Regulation of Fertility, Peptides in Testis Function and Steroidogenesis in Testis	University of Hyderabad in collaboration with the Indian Society of Andrology	Prof. P.R.K. Reddy, School of Life Sciences, University of Hyderabad, Hyderabad 500134
September 26-28 1988	International Conference on Welding Technology in Developing Countries	To provide an opportunity to scientists and technologists from developing and advanced countries to share their experiences in the area of Welding Technology.	University of Roorkee, Roorkee.	Prof. P.C. Gupta, Organising Secretary, International Conference on Welding Technology in Developing Countries, Department of Mech. & Ind. Engg., University of Roorkee, Roorkee—247667

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Mathematics

1. John Tutu, M. *Some of the properties of regular semi-groups.* Kerala. Dr. A.R. Rajan and Dr. K.S. Subramonian.

Physics

1. Bhardwaj, Anil. *Study of some energetic and dynamic aspects of planetary ionosphere.* BHU. Dr. R.P. Singhal.

2. Bora, Madhurjya Prasad. *Stability problems in hydro-magnetic.* Delhi. Dr. N.K. Nayyar.

3. Chadha, Rita. *Spach and time dependent behaviour of fast abutrons in thorium-uranium mixture'.* Delhi. Dr. Feroz Ahmed.

4. Gupta, Lalita. *Low temperature solid state physics.* Delhi. Dr. G.K. Chadha.

5. Jose, Mathewkutty. *Studies on the middle atmosphere.* Kerala. Dr. S. Devanarayanan.

6. Kapoor, Vijay. *Experimental high energy physics.* Delhi. Dr. R.K. Shivpuri.

7. Kashid, A.P. *Studies on doped ferroelectric ceramics of sodium vanadate, potassium vanadate, lithium vanadate and their solid solutions.* Shivaji. Dr. S.H. Chavan.

8. Murali, A.K. *Dynamic of the equatorial atmosphere.* Kerala. Dr. S.R. Prabhakaran Nair.

9. Rawat, Rajdeep Singh. *Laser plasma interaction.* Delhi Dr. M.P. Srivastava.

10. Singh, Kamala Prasad. *Study of solid electrolytes.* BHU. Dr. P.N. Gupta.

11. Sudha, C.G. *Studies on the structure and properties of strongly interacting particles.* Kerala. Dr. M.N. Sreedharan Nair.

12. Veena. *Dynamics of condensed system.* Delhi. Dr. S.P. Tewari.

13. Yazad, Ali Sharzadian. *Physical properties of thin films.* Delhi. Dr. Raj Rup.

Chemistry

1. Agnihotri, Narinder Kumar. *Synthesis of coordination complexes of drugs and study of their anti-bacterial and anti-microbial properties.* Delhi. Dr. H.B. Singh.

2. Agrawal, Prahlad Prasad. *Bimetallic complexes of some sulphur containing ligands.* BHU. Dr. N.K. Singh.

3. Bamane, S.R. *Structutal and catalytic studies of oxides : Mixed oxides.* Shivaji. Dr. A.M. Chavan.

4. Farahani, Bahman Vashoghani. *Physical chemistry polymers.* Delhi. Prof. S.K. Chatterjee.

5. Gupta, Alka. *Peptide synthesis.* Delhi. Prof. V.S. Chauhan.

6. Joshi, Prafulla N. *Synthesis and characterisation of synthetic zeolite of type L.* Shivaji. Dr. P. Ratnasamy.

7. Munaff, Golighar Abdul. *Adsorption studies of dyes and pollutants on inorganic surfaces.* BHU. Dr. S.D. Khatri.

8. Singh, Birendra. *Electroanalytical techniques.* BHU. Dr. D. Singh.

Earth Sciences

1. Pandey, Upendra Kishore. *Metamorphic petrology.* BHU. Prof. R.K. Lal.

2. Sahu, Ram Narayan. *Study of ground water soils, soil conservation and conjunctive use of water resources around Jatera District, Tikamgarh, M.P.* HS Gour. Dr. S.K. Mishra.

Engineering & Technology

1. Jose, N.A. *Development of a multilevel decision programme of inter area power transfer and control.* Kerala. Dr. K. Ramachandran.

2. Juneja, Narendra Nath. *Studies and performance of diesel engine using vegetable oils as supplementary fuels.* BHU Dr. B.B. Bansal.

3. Khan, Aun Mohammad. *Bud data identification and processing in power system state estimation.* BHU. Dr. D.S. Chauhan.

4. Shukla, Kaushal Kumar. *Digital multivariable control.* BHU. Shri S.K.B. Parikh and Prof. A.N. Tripathi.

5. Sinha, Parmeshwar Prasad. *Phase transformations in mayaging steel.* BHU. Dr. M.K. Mukherjee and Prof. D.S. Sharma.

6. Syed Sikander Nabi. *A pilot plant study on use of SRP in water treatment.* Delhi. Prof. A.E.S.A. Aowel.

7. Vaish, J.P. *Investigation of some aspects of fracture phenomenon.* BHU. Prof. B. Kishor and Dr. A. Bhattacharya.

BIOLOGICAL SCIENCES

Microbiology

1. Ratna Kumari, T. Sita. *Studies on microbial metabolism.* Kerala. Dr. P.A. Kurup and Dr. A.G. Mathew.

Biochemistry

1. Balachandran, C. *Studies on the chemistry of coconut endosperm Cocos nucifera Linn as related to maturation, senescence and germination.* Kerala. Dr. C. Arumugham.

Botany

1. Verma, Neeraj. *Regulation of gene expression in eukaryotes.* Delhi. Prof. R.C. Sachar and Dr. H.G. Raj.

Zoology

1. Maldar, Y.R. *Effect of diacetyl morphine on glycoprotein synthesis of salivary and Brunner's gland.* Shivaji. Dr. (Mrs) M.M. Pillai.

2. Mundaganur, D.S. *Effects of various analgesic antipyretics on duodenum and Brunner's glands.* Shivaji. Dr. (Mrs) M.M. Pillai.

Medical Sciences

1. Abraham, Jojy. *Synthesis and study of steroid modifications.* Panjab. Prof. Harkishan Singh and Dr. D.P. Jindal.

2. Aley, K.O. *Studies on the role of gaba ergic substances in the pharmacological action of some drugs.* Panjab. Prof. S.K. Kulkarni.

3. Arora, Jagdish Chander. *Studies on natural gums for sustained drug release from tablet dosage forms.* Panjab. Prof. S.K Baveja and Dr. K.V. Ranga Rao.

4. Jain, Sunil Kumar. *Magnetically guided targeting of some drugs using cellular carrier system.* HS Gour. Dr. S.P. Vyas.

5. Kamla. *Investigation on Euphorbia prostrate Ait.* Panjab. Dr. A.K. Singla.

6. Katare, Om Prakash. *Studies on target oriented liposomal formulations of some drugs.* HS Gour. Prof. V.K. Dixit.

7. Lavasa, Shakuntala U. *Studies on allergen(s) causing respiratory allergy during April-May in Chandigarh and its surrounding regions.* Panjab. Dr. Lata Kumar and Dr. S.C. Kaushal.

8. Mishra, Shiv Prasad. *Ayurveda ka paripreksya mein kaurike satra ka adhyayan.* BHU. Dr. L.D. Dwivedi.

9. Nair, K. Reghu Ram. *Static and dynamic renal imaging.* Kerala. Dr. V. Padmanabhan and Dr. M. Krishnan Nair.

10. Parajuli, Gopal Prasad. *Padmapuran mein ayurvediya tatvon ki mimansa.* BHU. Dr. L.D. Dwivedi.

11. Ranasingha, Sarnath G. *Clinical and experimental studies on hypolipidaemic property of certain ayurvedic and traditional herbal drugs.* BHU. Prof. S.N. Tripathi.

12. Singh, Gajendra. *Targetting of drugs and development of control release drug delivery systems.* Delhi. Dr. S.N. Sharma.

13. Tewari, Jhengat. *Rogon ka pragyan mein jyotish ki upadeyata.* BHU. Dr. L D. Dwivedi.

14. Thorat, Sanjay Narhari. *Studies on the role of purinergic substances in the pharmacological action of some drugs.* Panjab. Prof. S.K. Kulkarni.

15. Upadhyaya, Om Prakash. *Role of plant extract in juvenile diabetes mellitus.* BHU. Prof. J.K. Ojha.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities.

PHYSICAL SCIENCES

Mathematics

1. Asthana, Sudha. *A study of general sheffer sets of polynomials relative to shift invariant operators.* BHU. Dr. S.N. Singh.

2. Dube, Surendra Nath. *Integral transforms and their applications.* BHU. Dr. K.N. Rai.

3. Gupta, R.P. *Some problems on summability theory and theory of approximations.* Guru Ghasidas. Dr. Sunil Verma.

4. Hajra, Sushama. *Propagation of seismic waves in liquid saturated porous solids.* Calcutta.

5. Jaiswal, R.K. *Almost periodic function.* Vikram. Dr. Brijendra Singh.

6. Katiyar, Hari Vansh Kumar. *Certain investigations on unsteady hydrodynamic and magnetohydrodynamic flows.* BHU. Dr. Newal Kishore.

7. Khanna, Ramesh. *Studies on hydromagnetic and dialytic fluid flow theories.* Osmania.

8. Matharoo, Amarjit Singh. *A study on special finsler spaces.* BHU. Prof. B.B. Sinha.

9. Nanda Kumar, K. *Forced and free convection with mass transfer in nonhomogeneous isotropic porous media.* IIT Delhi. Prof. K. N. Mehta.

10 Narasimham, Mangipudi Satya. *Certain evaluations of graphs.* Andhra.

11. Prasada Rao, Ravuri Mahana Chandra Vara. *Some generalisations of the normal distribution.* Andhra.

12. Raypalodhi, Swapna. *Some eigen value problems associated with differential equations.* Calcutta.

13. Sharma, Uma Shankar. *Some problems in classical and micro polar elasticity.* Durgawati. Dr. M. Lal.

14. Singh, Akoijam Manglemjao. *A mathematical study of population dynamics with particular reference to Manipur.* Dr. D.P. Sharma.

15. Singh, Rajendra Prasad. *A study of flow behaviour of conducting fluids.* BHU. Dr. H.L. Agrawal.

16. Singh, Ram Bali. *A study of migration pattern from rural areas.* BHU. Dr. K.N.S. Yadava.

17. Singh, Shashi Bhushan. *Some aspects of Newtonian and non-Newtonian KMFD flows.* BHU. Dr. H.L. Agrawal.

18. Sultan, Taha Ibrahim Mohamed. *On generation functions for certain special functions and their applications.* Calcutta.

19. Venkata Sobha, Varanasi. *Saturated porous flow in a rotating straight pipe.* Andhra.

Physics

1. Aggarwal, Daya. *Positron annihilation studies in noble gases.* Delhi.

2. Agarwal, Sangita. *Study of nuclear reactions in light, medium and heavy nuclei using 50 MeV alpha particles.* BHU. Prof. J. Rama Rao.

3. Datta, Pranayee. *Studies on some aspects of electromagnetic radiation from extensive air showers.* Gauhati. Dr. K.M. Pathak.

4. Ghosh, Ganeshchandra. *Characteristics of multiparticle phenomena as observed in proton-nucleus interactions at accelerator energies.* Calcutta.

5. Kanchan, Dinesh Kumar. *Mossbauer spectroscopic and other physical studies on semiconducting sodium-vanadate glasses.* IIT Delhi. Prof. R.G. Mendiratta and Prof. R.K. Puri.

6. Khare, Neeraj. *Studies on photoelectrochemical solar cells.* BHU. Prof. S. Chandra.

7. Krishnakumar, R. *Line imperfections and ferroelectric properties of organic solids.* Nagpur. Dr. R.M. Chaudhary.

8. Manna, Subharansusekhar. *Statistics of constrained self avoiding walks.* Calcutta.

9. Natarajan, Lakshmi. *Study of the K. satellite and hypersatellite lines in the X-ray and auger spectra of some light elements.* Nagpur. Dr. C. Mande and Dr. A. Tankhiwale.

10. Nayak, N. Govinda. *Experimental studies on coherent atomic form factors at intermediate photon momentum transfer.* Mangalore. Dr. K. Siddappa.

11. Palaniappan, L. *Growth, electrical conductivity and microhardness studies of SbSI and SbSeI crystals.* Anna.

12. Rajan, Narayanaswamy. *Some new techniques in mossbauer spectroscopy and their applications.* BHU. Dr. A.K. Nigam.

13. Ramchandar Rao, S. *Study of amorphous indium selenide and indium antimonide thin films.* Osmania.

14. Sai Baba, Tarigoppula. *Studies of internal Bremsstrahlung from the beta decaying isotopes 204TL, 90Sr, 89Sr, 137Cs, 203Hg, and 95Zr.* Andhra.

15. Sanyal, Sudip. *Hyperspherical harmonics technique physics for few-body dynamics.* BHU. Prof. S.N. Mukherjee.

16. Sharma, Renu. *Theoretical investigations of certain characteristic properties of super conductors.* Rajasthan. Dr. Lachhman Dass.

17. Singh, Bachau. *Fast proton transport in molybdic acid* $(M_0O_32H_2O)$ *and possible electrolysis of water of crystallisation.* BHU. Prof. S. Chandra.

18. Suresh Kumar. *Rb-Sr geochronological studies of some granitic and gneissic rocks of Himachal and Kashmir Himalayas, India.* Panjab.

19. Tewari, Raj Deo. *Electronic structure, spectra and potential mapping of some organic and biomolecules.* BHU. Dr. P.C. Mishra.

20. Thomas, P.T. *Studies on the properties of irradiated wood.* Calicut. Dr. K. Neelakandan.

Chemistry

1. Agrawal, Rajiv. *Chemical and biochemical studies of some leguminous seeds.* Bundelkhand. Dr. G.S. Niranjan.

2. Balasubramanian, K. *Studies in catalytic transformation : Dehydration and dehydrogenation over alumina, chromia—alumina, platinum—alumina and chromite spinels in the vapour phase.* Anna.

3. Bansal, Mahesh Chand. *Chemical and carbon—13 NMR studies of some naturally occurring and synthetic flavonoids.* Delhi.

4. Beena Kumari. *Cyclic voltammetry at the tubular graphite electrode.* Panjab.

5. Bhatt, V.C. *Preparation and solution properties of copolymers.* Bhavnagar. Dr. R.S. Patel.

6. Bhattacharyya, Sumitra. *Application of irreversible thermodynamics in multi component system.* Calcutta.

7. Chakraborty, Subhash Chandra. *Physiochemical studies on metal complexes using thio compounds as ligands.* Karnatak. Dr. A.S.R. Murthy.

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14. Jain, Jainendra Kumar. *Synthesis of heterocyclic compounds through N-phenacylpyridinium and vinylphosphonium salts.* Rajasthan. Dr. R.K. Bansal.

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25. Ranga Rao, Vanka. *Analytical aspects of some redox organic compounds.* Andhra.

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27. Shet, Manjunath Shridhar. *Studies on the lectin from winged bean tubers.* Karnatak. Dr. M. Madaiah.

28. Shukla, Rajesh. *Substituted nitrosyl complexes of some transition metals.* Bundelkhand. Dr. R.C. Maurya.

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34. Thakkar, Jatin Ratilal. *Studies on epoxy resins : Synthesis, characterization and modifications.* Patel. Dr. V.S. Patel.

35. Uppal, Kamini. *Synthesis, characterization and reactivity of halo alkoxides of some 3d-metals.* Panjab.

36. Varma, K.V.R. *Studies on toxic and hazardous wastes-removal of heavy metals employing industrial wastes containing polymeric materials.* Nagpur. Dr. P.V.R. Subrahmanyan.

37. Verma, Neeraj. *Influence of minor additions of Ta, La, Ce and Nd on the corrosion behaviour of aluminium bronzes in aqueous acid solutions.* BHU. Dr. R.N. Singh.

Earth Sciences

1. Krishnaiah, N. *Geology and mineralisation of Mailaram Copper Deposit, Khammam District, Andhra Pradesh.* Osmania.

2. Sachan, Himanshu Kumar. *A petrographic and genetic study of Zawar lead-zinc deposit, Distt. Udaipur, Rajasthan.* BHU. Prof. A.K. Bhattacharya.

3. Sadatipour, S.M.T. *Geomorphology and ground water studies of Gangolli Basin, Dakshina Kannada, Karnataka, India.* Mangalore. Dr. T.R. Sreedhara Murthy.

4. Santosh, K.R. *Theoretical studies on air pollution meteorology in South India.* CUST. Dr. D.V. Viswanadham.

5. Sharma, Dasigi Narasimha. *Geological factors of roof falls in underground coal mines of Venkatesh Khani 7 incline, Kothagudem in Khamman District of Godavari Valley Coalfield.* ISM. Prof. D. Chandra.

Engineering & Technology

1. Bandyopadhyay, Arupratan. *Studies on vinyl polymerization with polyamine based initiator systems.* Calcutta.

2. Bharadwaj, Sarvesh Kumar. *Thermal performance of some solar air heating systems.* IIT Delhi. Prof. M.S. Sodha and Dr. Ashvini Kumar.

3. Bhattacharyya, Apurba Chandra. *Studies on rice bran oil.* Calcutta.

4. Chakraborti, Ranjit. *Studies on the solvent interesterification process for the modification of palm oil and palm oil based blends to produce edible fat products.* Calcutta.

5. George, K.E. *Studies on polymer blends with special reference to NBR/PVC and CR/PVC blends.* CUST. Dr. D.T. Joseph.

6. Ghosh, Gautam. *Process development of bone china product and investigation of its properties.* Calcutta.

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8. Hrishikesan, D.S. *Heat transfer studies on solar energy collector-cum-storage systems.* IIT Delhi. Prof. H.P. Garg.

9. Mallikarjuna Rao, K.V.V. *Studies on rheological properties of coal-oil mixtures and coal-water mixtures.* ISM. Dr. G.V. Reddy.

10. Nagar, Narendra Kumar. *Machine tool accuracy.* Devi Ahilya.

11. Ray, Amalendu. *Strength formation of expansive cement based on blast furnace slag under condition of restraint.* Calcutta.

12. Shankar, K.V. *Subsidence prediction using three-dimensional numerical modelling technique.* BHU. Prof. B.B. Dhar.

13. Sharma, Sunil Chandra. *Some studies of seeding and current conduction in MBD combustion plasmas.* IIT Delhi. Dr. R.P. Dahiya.

14. Shivanna. *Stable and fast algorithms for power system transient stability.* IIT Delhi. Prof. S.C. Tripathy and Dr. R. Balasubramanian.

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16. Singh, Vinay Kumar. *Some theoretical studies on high speed Opfet.* BHU. Prof. B.B. Paul.

17. Ughade, Vivek A. *Development and fabrication of low cost package water treatment plant for rural areas.* Nagpur. Dr. A.G. Bhole.

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1. POST-GRADUATE CERTIFICATE IN THE TEACHING OF ENGLISH (PGCTE)

Applications are invited for admission to the one year PGCTE Course beginning in April 1988.

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(a) An MA. in English (preference will be given to teachers of English)

OR

(b) An M.A. in an allied subject (Linguistics, Education, Mass Communication or Psychology), Class I or II with 5 years' experience of teaching English

OR

(c) An M.A. degree with experience in Methods of Teaching English at B.Ed./M.Ed. level

2. POST-GRADUATE DIPLOMA IN THE TEACHING OF ENGLISH (PGDTE)

Those who have a PGCTE from CIEFL or an equivalent qualification can apply for PGDTE beginning in August, 1988.

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	PGCTE	PGDTE
1. Without Late Fee	January 1, 1988	June 1, 1988
2. With Late Fee of Rs. 20/-	March 1, 1988	August 1, 1988

S.V.E. SOCIETY'S

Rural Engineering College, Bhalki

DIST. BIDAR (KARNATAKA)

Dated : 28-11-1987

No. SVES/REC/EST/87-88/3659

RECRUITMENT OF FACULTY

Applications are invited for the Posts of Professors, Asstt. Professors, Lecturers and Associate Lecturers in the Department of Civil, Mech., Industrial and Production, Electronics and Communication and Computer Science, Mathematics, Engg. Economics and Architecture and Town Planning.

The qualifications and Pay Scales are as per A.I.C.T.E. norms. D.A. and H.R.A. will be paid as per Karnatak Government rules.

Applications on plain paper with detailed bio-data and copies of the testimonials (in duplicate) should reach the undersigned within **15 Days** from publication of this advertisement.

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GANDHIJI UNIVERSITY

KOTTAYAM

No. AC. AII-1/525/87. **Dated : 19.11.87**

NOTIFICATION

Sub : Application for registration for Ph.D. Research-1988 Session—inviting applications —reg:

Applications in the prescribed form and manner are invited from eligible candidates for research leading to Ph.D. Degree of the University.

Eligibility : Pass in the Master's Degree Examination with 50% marks under the Faculty of Arts, Social Sciences, Oriental Studies and 55% marks under the Faculty of Science.

Research can be carried out in any of the Research Centres approved by the University.

Applications complete in all respects should reach the Registrar, Gandhiji University, Athirampuzha, P.O. Kottayam on or before 15.1.1988.

Application forms can be had from the Office Store of Gandhiji University directly or by post with a self-addressed and sufficiently stamped envelope and with the Challan Receipt for the prescribed fee of Rs. 5/- (Rupees Five only) per application form. The fee can be remitted in any of the Branches of S.B.T.

Prof. K. Madhavan Pillai
REGISTRAR

CLASSIFIED ADVERTISEMENTS

NORTH EASTERN REGIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY

NAHARLAGUN : ARUNACHAL PRADESH

Advertisement No. 6/87

The North Eastern Regional Institute of Science and Technology is an autonomous institute sponsored by the Government of India. The Institute offers courses in Applied Sciences, Engineering and Technology at all levels particularly for the benefits of the students of the North Eastern Region.

Applications are invited for the following vacancies in the Institute :

1. Assistant Professor (Forestry and Soil Conservation) :

One post in the un-revised U.G.C. scale of Rs. 1200-50-1300-60-1900 (Scale will be revised shortly).

Minimum Qualification and Experience required : Doctorate Degree in Forestry Science/ Soil Conservation with at least 5 years teaching experience at Degree level.

OR

First Class or High Second Class Master's Degree in Forestry Science/Soil Conservation with consistently good academic record with research work of equally high standard and teaching experience at Degree level for 7 years.

2. Assistant Professor (Horticulture and Plantation Crop).

One post in the un-revised U.G.C. scale of Rs. 1200-50-1300-60-1900 (Scale will be revised shortly).

Minimum Qualification and Experience : Ph.D. in any branch of Horticulture with at least 5 years teaching experience at Degree level.

OR

First Class or High Second Class Master's Degree in Horticulture with consistently good academic record with research work of equally high standard and teaching experience of 7 years.

Age : Age limit for both the above posts is 45 years.

3. Lecturer (Botany)

Minimum Qualification and Experience : First class or High Second Class Master's Degree in Botany with at least 5 years experience in teaching in colleges or Higher Secondary Schools.

Desirable : Doctorate Degree in Botany.

4. Lecturer (Silvi-Culture)

5. Lecturer (Forest Utilisation and Management)

Minimum Qualification and Experience : First Class or High Second Class Master's Degree in Forestry Science or Diploma in Forestry A.I.F.C. from any recognised Forestry Institute with at least 5 years experience in teaching in Forestry Colleges/Institutes,

6. Lecturer (Soil and Water Conservation).

Minimum Qualification and Experience : First Class or High Second Class M.Sc. in Soil and Water Conservation with at least 5 years experience in teaching.

7. Lecturer (Fruit and Vegetables)

Minimum Qualification and Experience : First Class or High Second class Master's Degree in Horticulture with at least 5 years experience in teaching.

8. Lecturer (Electrical Engineering)

Minimum Qualification and experience : First Class or High Second Class Master's Degree in Electrical Engineering with consistently good academic record and some teaching experience. Preferably in Doctorate Degree.

All the above posts of Lecturers are in the Pre-revised U.G.C. Scale of Rs. 700-1600 (Scale will be revised shortly).

Age limit for posts of Lecturer is 40 years.

9. Laboratory Assistants

One post each in Botany, Soil Conservation, Forestry and Horticulture in the Scale of Rs. 1400 to 2300/- (Revised).

Minimum Qualificatian and Experience : Candidates for all these 4 categories of posts must have at least 2 years experience in Laboratory work. B.Sc. Hons. for Botany Laboratory, B.Sc. (Agro with special paper in Soil and Water Conservation or Soil Conservation Laboratory, B.Sc., with Botany one of the subject having Diploma Forest Renger Course and B.Sc. in Horticulture for Horticulture Laboratory.

Age : Age limit for the post Laboratory Assistant is 30 years.

10. Stenographer Grade-III

In the Scale of Rs. 1200-2040/-. Candidates must be Graduate in Arts/Science/ Commerce having speed of 80 w.p.m. in Stenography and 40 w.p.m. in type writing, in English. Age should be within 25 years on Ist January 1988.

Age is relaxable in case of SC/ST, candidates and candidates in service in Government or Semi-Government Undertakings.

All the above posts carry in addition to basic pay, allowances and benefits admissible to Central Government employees posted in Arunachal Pradesh. Application on plain paper alongwith a Postal Order of Rs. 7.50/- (Rupees 2 in case of SC/ST candidates) attested copies of certificates of age, educational qualification, experience etc. may be submitted to the Deputy Registrar (Admn.) NERIST, P.O. Naharlagun, Pin No. 791 110, Arunachal Pradesh, by **15th January, 1988.**

1. Name of post for which applied for.
2. Name and address for communication.
3. Date of Birth.
4. Educational Qualification stated percentage of marks, Division/Class from Graduate onwards.
5. Experience (Period and nature of duty to be specified).
6. Present occupation.
7. Present Pay,
8. Pay demand.
9. Whether belonging to SC/ST.

Persons serving in Government and Semi-Government organisation should apply through proper channel with advance copy to this office. Second class railway fare for to and fro journey will be reimbursed to candidates who appearing for interview before Selection Committee.

M.R. Das
DEPUTY REGISTRAR (Admn.)

REGIONAL ENGINEERING COLLEGE
SILCHAR (ASSAM) 788 010

Advertisement No. 4/87

Applications are invited for the following posts :

1. Professor of Applied Mechanics-1,/Civil Engineering-1.
2. Asstt. Professor of Electrical Engineering (including Electronics)-5,/ Mechanical Engineering-1.
3. Lecturer of Electrical Engineering-1,/Physics-1.

Scale of Pay

1. Professor : 1500-60-1800-100-2000-125/2-2500/- P.M. (Un-revised).
2. Asstt. Professor : 1200-50-1300-60-1900/- P.M. (Un-revised).
3. Lecturer : 700-40-1100-50-1600/- P.M. (Un-revised).

Requisite Qualification and Experience for the Post of Professor

An eminent scholar with published work of high quality in the appropriate field, actively engaged in research. Ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

Or

An outstanding Engineering/Technologist with established reputation who has made significant contribution to knowledge.

Requisite Qualification and Experience for the Post of Assistant Professor

A good academic record with a Doctor's Degree in a relevant field. At least 5 (Five) years experience of teaching and/or research end development provided further that candidates not possessing Ph. D. may be considered if they have to their credit equivalent research published work or design/ development work of a high order either in the institution or in an Industry.

Or

In the case of persons to be recruited from Industry or Professional fields candidates should possess good academic record with recognised Professional work of about 7 (Seven) years which should include innovation/or research and development.

Requisite Qualification and Experience for the Post of Lecturer in Engineering

(i) Master's degree in appropriate field in Engineering/Technology.

(ii) Consistently good academic records with a Bachelor's degree in Engineering/Technology. First Class at Bachelor's degree and/or Master's degree level.

(iii) One year relevant Professional experience outside academic/research Institutions.

Having regard to the requirement of the emerging fields of engineering and developing inter disciplinary programmes the requirement of Engineering/ Technology degree may be waived in the cases of otherwise well qualified candidates.

Provided further that if a candidate does not possess Professional experience or a candidate possessing experience is not found suitable, the person appointed will be required to obtain desired professional experience within a period of 5 (Five) years of appointment, failing which he/she will not be able to earn further increments until he/she fulfil the requirement.

Provided further that if candidates with Master's degree qualifications are not available or are not found suitable for appointment essential qualification may be relaxed and first class engineering graduates may be considered for appointment against the post of Lecturer. Such relaxation will be subject to the condition that the candidates concerned shall have to obtain M.Tech./ M.E. degree within a period of 5 (Five) years failing which they shall not be entitled for drawing further increments.

Requisite Qualification and Experience for the Post of Lecturer in Physics

(a) Good academic record with at least Second Class (C in the seven point scale) Master's degree in relevant subject from an Indian University or equivalent degree from a foreign university, and

(b) An M. Phil degree or a recognised degree beyond the Master's level or published work indicating the capacity of a candidate for independent research work.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his published work is of a very high standard, it may be relaxed any of the qualifications prescribed in (a) above.

Provided further that if a candidate possessing the qualifications as at (b) above is not available or not considered suitable, the college on the recommendation of the Selection Committee may appoint a person possessing a consistently good academic record on the condition that he/she will have to obtain an M. Phil degree or a recognised degree beyond the Master's level within 8 (Eight) years of his/her appointment failing which he/she will not be able to earn future increments till he/she obtains that degree or gives evidence of equivalent published work of high standard.

Specialisation : In any one or more of the following fields.

Professor Applied Mechanics : Stress Analysis/Fluid Mechanics.

Professor Civil Engineering : Environmental Science Engg./Structural Engg./ Transportation Engg./Water Resources Engg./Surveying/Soil Mechanics.

Asstt. Professor Electrical Engineering (including Electronics) : Control System Engg./Electrical Mech./Electric Field Theory/Power System/High Voltage Engg. / Electric Drive / Communication Engg./Digital Electronics/Micro-Wave Engg. / Instrumentation Technology/ Radar Technology/Industrial Electronics/Computer Science & Engg./Biomedical Engg.

Asstt. Professor Mechanical Engineering : Specialised knowledge in the following field : Industrial Engineering and Management.

Lecturer in Engg. subjects : Any specialisation will do.

Lecturer Physics : Specialised knowledge in one or more specified fields such as Solid State Physics or Nuclear Physics.

Application on plain paper (Typed) giving full bio-data, particulars of publications and details of present, emoluments showing the Pay-Scale, Present Basic Pay, D.A. and other allowances, together with a recent Pass-port size Photograph and Indian Postal Order of Rs. 10/- (Rupees Ten), (Rupees Five only for the candidates belonging to S.C./S.T.), should reach **the Principal, Regional Engineering College, Silchar-788 010, Dist. Cachar, Assam by 12th January, 1988.**

Total emoluments of a teacher at the minimum of the scale will be as follows :

(i) Professor : Rs. 2805/-.
(ii) Asstt. Professor : Rs. 2505/-.
(iii) Lecturer : Rs. 1738.60/-.

For the post of Professor 1st Class Railway fare and for the post of Asstt. Professor and Lecturer 2nd Class Railway fare by the shortest route will be admissible to the candidates for up and down journey for appearing in the interview. D.A. not admissible. The persons who are in service should apply through Proper Channel.

H. Bhaumik
PRINCIPAL & SECRETARY

DR. YASHWANT SINGH PARMAR UNIVERSITY OF HORTICULTURE AND FORESTRY

SOLAN

RECRUITMENT BRANCH

Advertisement No. 10/87

Applications on the prescribed form are invited for the following posts :

I. Posts in the Grade of Rs. 1500-2500 (Pre-revised) plus rent free unfurnished accommodation or allowance at the rate of 10% of Pay.

1. Dean, College of Horticulture.
2. Dean, College of Forestry.
3. Students Welfare Officer.

Qualifications for posts at Sr. No. 1 and 2

(1) Ph. D. degree or its equivalent in Horticulture/Forestry or in their Allied Sciences.

(2) Ten years' teaching/research experience in a relevant field out of which atleast five years' experience should be as Professor or equivalent rank.

(3) A significant contribution and accomplishment in the field of teaching/research/extension education as evidenced by publications/articles in a journal of repute.

Note : In case a suitable candidate with Ph. D. degree is not available for the post of Dean, College of Forestry, then a candidate having M.Sc. Forestry/M. Sc. with AIFC would also be eligible.

Qualification for Post at Sr. No. 3

(1) Atleast 2nd Class Master's degree in any discipline.

(2) Adequate experience of organising sports games and other students' welfare activities for a period of not less than ten years.

(3) Must have played at the National level.

II. Librarian in the grade of Rs. 1500-2500

Qualification

(1) Ph. D. degree in Library Science from recognised University/Institution.

(2) No less than ten years' experience of work in a Library of repute and good knowledge of modern library system or five years' or above as Deputy Librarian in a University or an Institution of comparable standard.

Note : Relaxable to 2nd Class Master's degree in Library Science from a recognised University/Institution in case of a candidate having ten years' experience as Deputy Librarian in a University Library.

III. Posts in the grade of Rs. 1500-2500

1. Professor of Fruit Breeding and Genetic Resources (1).
2. Professor of Post Harvest Technology (1).
3. Professor of Floriculture and Landscaping (1).
4. Professor of Soil Science and Water Management (1).
5. Professor of Bio-Technology (1).
6. Professor of Agril. Economics, Sociology and Extension Education (1).
7. Extension Co-ordinator (1).
8. Chief Scientist (1).

Qualifications—General

(1) Ph. D. degree or equivalent in the subject with consistently good academic record.

(2) Ten years' teaching/research/extension education experience in the subject out of which atleast five years experience should be as Associate Professor/equivalent.

(3) Significant contribution as evidenced by publications, articles in a journal of repute.

(4) Ability to provide leadership to the department.

Qualifications—Specific

Post at Sr. No. 1 : Ph. D. in Horticulture/Pomology/Genetic/Plant Breeding.

Post at Sr. No. 2 : Ph. D. in Horticulture/ Pomology / Food Technology with specialization in Post-Harvest Technology of Fruits, Vegetables and Foods.

Post at Sr. No. 3 : Ph. D. in Floriculture/ Landscaping / Horiculture with specialization in Floriculture and/or Landscaping.

Post at Sr. No. 4 : Ph. D. in Soil Science/Soil Physics with specialization in soil fertility, soil and water management, soil survey, soil classification and mapping and/or pedology.

Post at Sr. No. 5 : Ph. D. in Genetic/Cytogenetic/Molecular Biology/Botany with specialization in Cell Biology/Molecular Biology.

Post at Sr. No. 6 : Ph. D. in Agriculture Economics and Rural Sociology.

Post at Sr. No. 7 : Ph. D in Extension Education/Agriculture Extension/Horticulture/Forestry and allied disciplines.

Post at Sr. No. 8 : Ph. D. in Horticulture/Forestry/allied disciplines.

Qualifications

Post at Sr. No. 1 : Ph.D. in Horticulture/Pomology.

Post at Sr. No. 2 : Ph.D. in Horticulture/Pomology/Genetics/Plant Breeding with specialization in Fruit Breeding.

Post at Sr. No. 3 : Ph.D. in Horticulture/Pomology/Food Technology with specialization in Post Harvest Technology of Fruits, vegetables and foods.

Post at Sr. No. 4 : Ph.D. in Floriculture / Landscaping / Horticulture with specialization in Floriculture and/or Landscaping.

Post at Sr. No. 5 : Ph.D. in Botany with specialization in systematic botany.

Post at Sr. No. 6 : Ph.D. in Plant Pathology with specialization, preferably in Forest Pathology/Seed Pathology.

Post at Sr. No. 7 : Ph.D. in Soil Science with specialization in Soil Microbiology **OR** Ph.D. in Soil Microbiology.

Post at Sr. No. 8 : Ph.D. in Entomology/Epiculture with specialization/research experience in Honey Bee Management.

Post at Sr. No. 9 : Ph.D. in Soil Science with specialization in soil fertility, plant nutrition, soil physics, soil survey and soil classification and mapping.

Post at Sr. No. 10 : Ph.D. in Entomology with specialization in fruit Entomology.

Post at Sr. No. 11 : Ph.D. in Horticulture with specialization in Pomology.

Post at Sr. No. 12 : Ph.D. in Biochemistry with specialization in plant biochemistry.

Post at Sr. No. 13 : Ph.D. in Extension Education/Agriculture Extension/Horticulture/Forestry and allied discipline.

Post as Sr. No. 14 : Ph.D. in Horticulture/Pomology/Food Technology with specialization in fruit and vegetable preservation.

Note : For posts at Sr. No. V (1 to 14) in the Scale of Rs. 700-1600.

(i) Ph.D. degree in the concerned subject relaxable to M Sc. with consistently good academic record.

IV. Posts in the Grade of Rs. 1200-1900

1. Associate Professor of Floriculure and Landscaping (1)
2. Associate Professor of Bio-Chemistry (1)
3. Associate Professor of Fruit and Vegetable Technology (1)
4. Scientist of Soil Science and Water Management (1)
5. Scientist of Fruit Breeding (1)
6. Scientist of Forestry (1)
7. Vegetable Breeder (1)
8. Joint Extension Co-ordinators (2)

Qualifications—General

(1) Ph.D. degree or equivalent in the subject with consistently good academic record.

(2) Five years' teaching/research/extension education experience in the subject.

(3) Significant contribution as evidenced by publications, articles in a journal of repute.

Qualifications—Specific

Post at Sr. No. 1 : Ph.D. in Floriculture / Landscaping / Horticulture with specialization in Floriculture and/or Landscaping.

Post at Sr. No. 2 : Ph.D. in Bio-Chemistry with specialization or research experience in Plant Bio-Chemistry.

Post at Sr. No. 3 : Ph.D. in Horticulture Pomology/Fruit Technology with specialization in processing of fruits and vegetables.

Post at Sr. No. 4 : Ph.D. in Soil Science with specialization in Soil Physics, Soil Survey, Soil Classification and Mapping and Soil Conservation or work experience in water management.

Post at Sr. No. 5 : Ph.D. in Horticulture/Pomology/Genetic/Plant Breeding.

Post at Sr. No. 6 : Ph.D. in Forestry/Agronomy with specialization in agroforestry/botany with specialization in Forest Ecology.

Post at Sr. No. 7 : Ph.D. in Vegetable Crops/Olericulture with specialization in vegetable breeding.

Post at Sr. No. 8 : Ph.D. in Extension Education/Agriculture Extension/Horticulture/Forestry and allied disciplines.

V. Post in the Grade of Rs. 700-1600

1. Assistant Professor of Fruit Culture and Orchard Management (1)
2. Assistant Professor of Fruit Breeding and Genetic Resources (2)
3. Assistanr Professor of Post Harvest Technology (1)
4. Assistant Professor of Floriculture and Landscaping (1)
5. Assistant Professor of Botany (1)
6. Assistant Professor of Mycology and Plant Pathology(1)
7. Assistant Scientist of Soil Microbiology (1)
8. Assistant Scientist of Honey Bee Management (1)
9. Assistant Scientist of Soil Science and Water Management (1)
10. Assistant Entomoloists (2)
11. Assistant Horticulturist (1)
12. Assistant Scientist (Bio-Chemist) (1)
13. Assistant Extension Co-ordinator (1)
14. Assistant Horticultural Technologists (4)

(ii) In case a candidate selected for appointment hold Master's degree, he will have to obtain Ph.D degree within eight years of the date of appointment failing which he shall cease to earn increment(s) till he obtains Ph.D. degree.

VI. Assistant Registrar (1) in the Grade of Rs. 700-1600 (UGC)

Qualification

Master's degree or L.L.B. from a recognised University with not less than three years experience in a supervisory capacity in a University or an organization of comparable standard.

OR

Bachelor's degree from a recognised University with not less than six years experience in a supervisory capacity in a University or an organisation of comparable standard.

VII. Staff Nurse (1) in the grade of Rs. 510-940 (State Scale)

Qualification

Matric/Hr. Sec. (Part-I) or equivalent. Fully qualified 'A' grade Nurse with Midwifery or Basic B.Sc. Nursing Council.

General Instructions

1. **Higher Pay admissible in the case of meritorious candidates :**

2. Applicants already in service must send their applications through proper channel.

3. The University reserves the right not to fill up any of the posts advertised.

4. Applications received after the last date fixed therein may be rejected without making any reference to the candidates. Applications on plain paper are also liable to be rejected.

5. Benefits of Contributory Provident Fund-cum-Gratuity and Leave etc., as per University rules.

6. Other allowances on pay will be permissible as per rules of the University from time to time.

Application forms can be had from the Registrar, Dr. Yashwant Singh Parmar University of Horticulture and Forestry, Post Office Nauni, District Solan, HP 173230 by sending application fee of Rs. 10/-in the shape of crossed Indian Postal Order(s) payable to the Comptroller of this University alongwith a self addressed envelope of size 23x10 cms.

Applications complete in all respects with attested copies of testimonials should reach the Registrar by **21.1.1988**.

Candidates applying from abroad may send their applications on plain paper giving particulars of date of birth, examinations passed (from High School onwards) with division and percentage of marks obtained in the various examinations, teaching/research/extension experience with a list of Publications, if any, so as to reach the Registrar by 6.02.1988.

B. S. Nainta
REGISTRAR

S.N.D.T. WOMEN'S UNIVERSITY

1, NATHIBAI THACKERSEY ROAD, BOMBAY-400020

Wanted for Research Centre for Women's Studies, Bombay-49 one Permanent Lecturer with high second class Master's degree and an M. Phil in Social Sciences. Ph.D. will be given preference. Salary Scale : Rs. 700-40-1100-50-1600+ adm. allow. (Total Approx. Rs. 2250/-)

SUKHADIA UNIVERSITY

UDAIPUR

CORRIGENDUM

Reference: Advertisement No. 6/87

Dated : 21.11.1987

The last date for receipt of application form duly completed in all respect in the Office is **extended up to 31.12.1987 instead of 21.12.1987.**

G.S. Sharma
REGISTRAR

ALL INDIA INSTITUTE OF MEDICAL SCIENCES

ANSARI NAGAR, NEW DELHI-110 029

Advertisement No. 2/87-ESTT. I

Applications will be received by the Director, All India Institute of Medical Sciences, Ansari Nagar, New Delhi-110 029 from Indian citizens upto the **20th January, 1988** on the prescribed forms available on request for the following temporary posts :

1. **Professors : ELEVEN** : Two for (1) Pathology and one each for (2) Neuro-Anatomy (3) C.T.V.S. (4) Medicine (5) Paediatric Surgery (6) Radiodiagnosis (7) Cardiology (8) Anaesthesiology (9) Paediatrics and (10) Urology.

Pay Scale : (i) Rs. 2500-100-3200 inclusive of NPA for medically qualified candidates.

(ii) Rs. 1700-75-2525 for Non-Medical candidates.

Note : 1. For the post of Professor of Neuro-Anatomy both medical and non-medical candidates will be considered.

2. Of the two posts of Professor of Pathology one post is for Clinical Pathology and the other post is for Ocular Pathology at Dr. R. P. Centre for Ophthalmic Science at the AIIMS.

3. The post of Professor of C.T.V.S. is for Cardio-thoracic Centre at the AIIMS.

2. **Associate Professors : SEVEN** : One each for (1) Anatomy (2) Medicine (3) Surgery (4) Radiotherapy (5) Surgical Oncology (6) Medical Physics (Non-Medical) and (7) Electron Microscopy.

Pay Scale : (i) Rs. 2100-75-2625 inclusive of NPA for medically qualified candidates.

(ii) Rs. 1600-60-2020 for non-medical candidates.

Note : 1. For the post of Assoc. Professor of Anatomy both medical and non-medical candidates will be considered.

2. The posts of Assoc. Professor of Radiotherapy, Surgical Oncology and Medical Physics (Non-medical) are for Institute Rotary Cancer Hospital at the AIIMS.

3. The post of Assoc. Professor of Electron Microscopy is for the Deptt. of Anatomy at the AIIMS.

3. **Assistant Professors : FIVE** : One each for (1) Clinical Neuro-Physiology (2) Nuclear Medicine (3) Obst. & Gynaecology (4) Physical Medicine & Rehabilitation and (5) Biotechnology.

Pay Scale : (i) Rs. 1800-75-2100-100-2400 inclusive of NPA for medically qualified candidates.

(ii) Rs. 1300-60-1720 for non-medical candidates.

Note : 1. For the post of Asstt. Professor of Biotechnology both medical and non-medical candidates will be considered.

2. The post of Assistant Professor of Clinical Neuro-Physiology is for the Neuro-Sciences Centre at the AIIMS.

3. The post of Assistant Professor of Biotechnology is for Biotechnology Programme.

4. **Lecturers : THIRTY** : Four for (1) Anaesthesiology and three each for (2) Radio-diagnosis (3) Pathology and two each for (4) Neuro-Surgery (5) Obst. & Gynaecology and one each for (6) Biochemistry (7) Biophysics (8) Cardiology (9) C.T.V.S. (10) Forensic Medicine (11) Hospital Administration (12) Otorhinolaryngology (13) Physiology (14) Pharmacology (15) Psychiatry (16) Reproductive Biology (17) Clinical Pharmacology (18) Ocular Microbiology (20) Nursing and (21) Entomology.

Pay Scale : (i) Rs. 1500-60-2040 inclusive of NPA for medically qualified candidates.

(ii) Rs. 900-50-1600 for non-medical candidates.

(iii) Rs. 2200-75-2800-EB-100-4000 (Revised) for Lecturer in Nursing.

Note : 1. For the posts of Lecturer in Biochemistry, Bio-physics, Hospital Administration, Physiology, Pharmacology, Reproductive Biology, Ocular Microbiology and Entomology both medical and non-medical candidates will be considered.

2. Of the four posts of Lecturers in Anaesthesiology, one post is for Cardiothoracic Centre at the AIIMS.

3. The post of Lecturer in C.T.V.S. is for Cardiothoracic Centre at the AIIMS.

4. Of the three posts of Lecturer in Radio-diagnosis, one post is for Neuro-Sciences Centre and one for Institute Rotary Cancer Hospital at the AIIMS.

5. The post of Lecturer in Clinical Pharmacology is for Institute Rotary Cancer Hospital at the AIIMS.

6. The posts of Lecturer in Ocular Microbiology and Ophthalmology are for Dr. R.P. Centre for Ophthalmic Sciences at the AIIMS.

Reservation : Nine posts of Lecturers are reserved for Scheduled Castes candidates and four posts are reserved for Scheduled Tribes candidates.

5. **Finance & Chief Accounts Officer : One**

Pay Scale : Rs. 3000-4500

6. **Head of the Deptt. of Dietetics :** One

Pay Scale : Rs. 3000-4500

7. **Blood Transfusion Officer** : One (for C.N. Centre)

Pay Scale : Rs. 3000-4500+NPA.

8. **Electronic Engineer** : One (for N.S. Centre)

Pay Scale : Rs. 3000-4500

9. **Superintending Radiographer** :One (for I.R.C.H.)

(Reserved for Scheduled Caste candidates)

Pay Scale : Rs. 2200-4000

10. **Application Programmer** : One

(Reserved for Scheduled Tribe candidates)

Pay Scale : Rs. 2200-4000

11. **Senior Research Officer** : Two (One each for Haematology and Radioimmuno assay Lab.). The post of S.R.O. (Haematology) is reserved for Scheduled Castes candidates.

Pay Scale : Rs. 3000-4500+NPA for Medical Officers.

12. Chief Supervisor Medical Social Work (for Orthopaedics Deptt.) : One

Pay Scale : Rs. 3000-4500

13. Bio-chemist (Clinical Chemistry Lab). One

Pay Scale : Rs. 2200-4000

Note : In case of non-availability of suitable Scheduled Castes and Scheduled Tribes candidates for the post of Superintending Radiographer, Application Programmer, these posts will be treated as unreserved and general candidates would also be eligible to apply for these reserved vacancies. The general candidates would, however, be considered only, if no suitable Scheduled Castes and Scheduled Tribes candidates are available for appointment to the vacancies reserved for them.

N.B. All posts carry usual allowances as admissible to Central Government servants of similar status stationed at Delhi/New Delhi. The pay scales of faculty posts are under revision in accordance with the recommendations of the 4th Pay Commission.

Note : (i) Scheduled Castes and Scheduled Tribes candidates called for interview will be paid travelling, allowance as per rules of the Institute.

(ii) The effective date upto which the requisite experience must be completed will be 30th June, 1988.

(iii) In case of Scheduled Castes and Scheduled Tribes candidates, the length of experience prescribed for these posts and the desirable qualifications wherever laid down are relaxable at the discretion of the Selecting Authority.

Upper Age Limit : 50 years for teaching posts and 30 years for non-teaching posts relaxable for Government servants, Scheduled Castes and Scheduled Tribes candidates or otherwise exceptionally qualified candidates. Upper age limit upto 5 years is relaxable in the case of Scheduled Castes and Scheduled Tribes candidates.

N.B. The essential qualifications are relaxable at the discretion of the Selecting Authority.

Applications forms and detailed information sheets can be obtained personally or on written requests accompanied by a self-addressed stamped (Rs. 1.40) envelope (23 x 8 cm.) from the office of Sr. Administrative Officer, Adm. Block, AIIMS, New Delhi.

HAVE YOU ACQUIRED A COPY OF

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- Scholarships and Fellowships;
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- Courses of Studies;
- Minimum requirements for admission to each course, duration and the subjects of study for each course;
- Names of Professors and Readers/Assistant Professors together with their academic titles department-wise;
- Names of Colleges together with names of Principals and Heads of Postgraduate Departments in Colleges;
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ASSOCIATION OF INDIAN UNIVERSITIES
AIU House, 16 Kotla Marg, New Delhi-110002
Telephones : 3310059, 3313390, 3312305, 3312429

SAURASHTRA UNIVERSITY

Applications in the prescribed forms are invited for the undermentioned posts. Application forms alongwith detailed requirement of qualifications, experience and other necessary details regarding these posts will be available from the Registrar, Saurashtra University, University Campus, Kalavad Road, Rajkot-360005 on sending a self-addressed envelope of the size 23 x 11 cms. with postage stamps worth Rs. 4-20. Applications in seven copies should reach this office on or before **11-1-1988** alongwith crossed Indian Postal Order worth Rs. 10-00. Qualifications, experience and specialization as mentioned in the details supplied with the application form will be considered final.

Sr. No.	Name of Post	No. of Post
1.	Reader in Chemistry	1
2.	Lecturer in Chemistry	1
3.	Reader in Physics	1
4.	Lecturer in Physics	1
5.	Reader in Electronics	1
6.	Lecturer in Electronics	2 (One post reserved for Scheduled Castes).
7.	Lecturer in Mathematics	1
8.	Reader in Statistics	1
9.	Lecturer in Statistics	1
10.	Lecturer in Commerce	1
11.	Reader in English	1
12.	Lecturer in English	2 (One post reserved for Scheduled Tribes).
13.	Reader in Psychology	1
14.	Lecturer in Psychology	2
15.	Reader in Sanskrit	1
16.	Lecturer in Sanskrit	2 (One post reserved for Scheduled Tribes).

These posts are permanent. Age ordinarily not exceeding 55 years. The age, educational qualifications and experience may be relaxed in suitable cases.

PAY SCALES

1. Reader : 1200-50-1300-60-1600-assessment-60-1900.
2. Lecturer : 700-40-1100-50-1300-assessment-50-1600.

R.A. Desai
REGISTRAR

SHER-E-KASHMIR UNIVERSITY OF AGRICULTURAL SCIENCES & TECHNOLOGY

Camp Office : 45-B/B,

Gandhinagar, Jammu-180004

Advertisement No. 1 of 1987

Dated : 3-12-1987

Application on prescribed forms are invited for the following categories of posts :

I. Professor/Chief Scientist (Un-revised UGC Pay Scale of Rs. 1500-2500)

(1) Water Management (2) Forestry (3) Agronomy (4) Post Harvest Technology (Fruits) (5) Entomology.

Qualifications : (a) **Essential :** (i) Doctorate Degree in subject concerned. (ii) Ten years Teaching and/or Research experience in the concerned subject out of which about five years should be in the rank of Associate Professor or equivalent. (iii) Good Research experience as evidenced by publications. (b) **Desirable :** (i) Ability to provide leadership in the subject/discipline (ii) Good Research experience as evidenced by publications (c) **Relaxations:** (i) Doctorate Degree relaxable to first class Master's Degree provided the candidate is having about ten years experience in the rank of Associate Professor or equivalent in Teaching and/or Research. However, such candidates, if selected, will have to complete Ph.D. within 6 years of the appointment or else the annual increments will be stopped. (ii) In case of candidate who holds post-graduate qualification in subject/discipline other than the prescribed, but has been working in the discipline concerned, an additional 2 years experience will be required over and above the minimum prescribed period.

Note : (i) For the post of Professor/Chief Scientist, Water Management, a person holding doctorate degree in Agronomy/Agricultural Engineering/Soil Science with specialization and experience in Water Management will also be eligible.

(ii) For the post of Professor/Chief Scientist, Post Harvest Technology persons holding doctorate degree in Horticulture or Food Technology with specialization and experience in Post Harvest Technology will also be eligible.

II. Associate Professor/Senior Scientists (Un-revised UGC Pay Scale of Rs. 1200-1900).

(1) Agronomy (2) Plant Pathology (Systemic Mycology/Fruit Pathology (3) Plant Breeding & Genetics (4) Floriculture (5) Olericulture (6) Plant Physiology (7) Forestry (8) Soil Science (Soil Survey/Soil Physics (Mineralogy) (9) Agricultural Engineering. (10) Animal Products Technology (11) Animal Nutrition (12) Animal Breeding (13) Veterinary Physiology (14) Veterinary Pathology (15) Veterinary Anatomy.

Qualifications : (a) **Essential :** (i) Doctorate Degree in the subject concerned. (ii) 7 years experience of Teaching and/or Research in the subject out of which about 4 years should be in the rank of Assistant Professor or equivalent. (b) **Desirable :** Research experience as evidenced by publications. (c) **Relaxations :** (i) Doctorate Degree relaxable to High Second Class Master's Degree in case of candidates with good record of productive research and/or brilliant academic record. However, such candidates, if selected, shall have to complete Ph.D. within 6 years of the appointment or else the annual increments will be stopped. (ii) In the discipline of Veterinary Sciences, Forestry & Agricultural Engineering, Doctorate Degree will not be essential but preferable (iii) In respect of posts at Sr. No. 4 and 5, candidates holding Postgraduate Degree in Horticulture with specialization in Olericulture/Floriculture will also be eligible.

III. Assistant Professor/Junior Scientist (Un-revised UGC Pay Scale of Rs. 700-1600)

(1) Agronomy (2) Agricultural Entomology (3) Plant Pathology (4) Pomology (5) Plant Breeding & Genetics (6) Soil Science (7) Post Harvest Technology (Fruits) Floriculture (9) Olericulture (10) Agricultural Engineering (11) Forestry/Agro-forestry (12) Reeling and Fibre Technology (Silk) (13) Extension Education (Animal Husbandry/Agriculture) (14) Veterinary Parasitology (15) Animal Nutrition (16) Animal Reproduction & Gynaecology (17) Poultry Science (18) Veterinary Pathology (19) Veterinary Medicine (20) Biochemistry.

Qualifications : (a) **Essential :** High Second Class Master's Degree in the subject concerned and two years experience of Teaching/Research or Ph. D. Degree in the subject concerned. (b) **Relaxations :** In the discipline of Veterinary Sciences/Agricultural Engineering/Forestry experience is relaxable.

Note : Except in case of Biochemistry, Forestry and Fibre Technology, basic professional degree in Agriculture / Agricultural Engineering/Veterinary Sciences & AH will be essential for all posts detailed vide I, II and III above but may be relaxed in case of candidates having worked in Agricultural University system.

IV. Assistant Students Welfare Officer (Un-revised UGC Pay Scale of Rs. 700-1603)

Qualifications : (a) **Essential :** (i) Master's Degree in Physical Education or Agriculture and Allied Sciences. (ii) Three years experience in the rank of Physical Instructor and equivalent/Demonstrator/Research Assistant with three years experience as Physical Instructor or equivalent.

V. Deputy Librarian (Un-revised UGC Pay Scale of Rs. 1200-1900)

Qualifications : (a) **Essential :** High Second Class Master's Degree in Library Sciences (ii) 7 years experience in Library of repute preferably in Agricultural University/Institution out of which about 4 years should be in the rank of Assistant Librarian of a University. (b) **Desirable :** (i) Doctorate Degree in Library Science (ii) Knowledge of State language and one foreign language viz. Russian, German, French. (iii) Master's Degree in Science preferably biological sciences.

VI. Assistant Librarian (Un-revised UGC Pay Scale of Rs. 700-1600)

Qualifications : (a) **Essential :** (i) Second Class graduate preferably in Biological Science with High Second Class Master's Degree in Library Science. (ii) 3 years experience as Senior Library Assistant or equivalent in the pay scale not less than 550-900 (Central Scale un-revised) or 875-1400 (State scale un-revised).

General Conditions

1. **Allowance & Provident Fund :** (As per Rules of this University.

2. **Age :** Note more than 55 years on 1-1-1988 (relaxable in case of Professors/Chief Scientists).

3. **Nature of Appointment :** Temporary with 2 years probation. However, candidates can be considered for appointment on deputation also on mutually agreeable terms.

Other Instructions

1. Application forms can be had from the Deputy Registrar (Est.) of the University free of cost. While making request for the application forms, please send a self-addressed envelope, 10" x 4", fully stamped, specifying the name of the post for which application form is intended.

2. Application forms complete in all respects should reach the office of the Deputy Registrar (Est), SKUAST, Post Box No. 262, Dalgate Office, Srinagar by or before **31st January, 1988**, alongwith a non-refundable application fee of Rs. 25/- (Rs. 10/- in case of schedule caste/schedule tribe candidates) in the form of Crossed Indian Postal Order drawn in favour of the Comptroller, Sher-e-Kashmir University of Agricultural Sciences & Technology, Srinagar-190001.

3. Candidates must have acquired requisite experience on the last date of submission of application.

4. The University reserves the right to withdraw or defer filling up of any of the posts advertised herein above.

H. M. Tahir
REGISTRAR

RANI DURGAVATI VISHWA-VIDYALAYA, JABALPUR

Advertisement No. Estt./87/2482

Dated : 1-12-1987

Applications in the prescribed form (in 8 copies) are invited for the following posts so as to reach the undersigned on or before **12th January, 1988**.

1. **Professor :** One for (i) Economics one each temporary for the present for (i) Hindi and (ii) Mathematics, in the Scale of Pay of Rs. 1500-60-1800-100-2000-125/2-2500.

2. **Reader :** One each for (i) Journalism and Mass Communication and (ii) English in the Scale of Pay Rs. 1200-50-1300-60-1900.

3. **Lecturer :** One temporary (leave vacancy) for Biological Science in the Scale of Pay Rs. 700-40-1100-50-1600.

The minimum essential qualifications for these posts are exactly the same as are prescribed by the University Grants Commission.

The prescribed application forms (in 8 copies) together with details of qualifications, specialization etc., can be obtained from the undersigned on payment of Rs. 15/- in person or by sending a crossed postal order of Rs. 15/- payable to the Registrar, Rani Durgavati Vishwavidyalaya, Jabalpur. The candidates who desire to get the application forms by Registered post should send an additional amount of Rs. 7/- by postal order for postal expenses.

The University reserves the right not to fill in any post or not to call candidates for interview.

Krishnaji Tiwari
REGISTRAR

Printed & Published by SUTINDER SINGH, on behalf of the Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E 2, Jhandewalan Extension, New Delhi-110055. Tel. 529157

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University News

MONDAY, DECEMBER 28, 1987

Rs. 1.50

Guru Nanak Dev University Women's Cricket Team—the winners of Inter-University Women Cricket Tournament 1987-88.

LALIT NARAYAN MISHRA COLLEGE OF BUSINESS MANAGEMENT

MUZAFFARPUR

(An Autonomous Institution under University of Bihar)

M.B.A. ADMISSION 1988-90

Applications are invited for admission in the two year Master of Business Administration (MBA) Course of Bihar University.

Eligibility :	Admission is open to Graduates belonging to any faculty—Arts, Science, Commerce, Engineering, Medicine, Agriculture etc. Employed graduates having atleast two years experience in Public Undertaking, Public Limited Companies or other such establishments of repute, holding executive posts are eligible for admission provided they are sponsored by their employer's for a period of two years and attach the certificate of sponsorship with the application for admission. Entrepreneurs engaged in Industries, must produce certificate of two years practical experience. Those whose application will not satisfy these conditions will be summarily rejected.
Selection Procedure :	Applicants will be selected on the basis of Written Examination followed by Personality Test. Sponsored candidates are exempted from appearing at the Written Examination. A limited number of applicants under the Sponsored group will be called for interview for selection.
Reservation :	Some seats are reserved for Scheduled Castes/Tribes and Girl candidates. Five seats are reserved for FOREIGN STUDENTS to be nominated by the Ministry of Education, Govt. of India, New Delhi, latest by 8th June, 1988.
Prospectus & Application Form :	Are available from 8th January, 1988 on payment of Rs. 35/- at the College Office on working days between 9.00 a.m. to 1.00 p.m. or by Registered Post on remittance through Bank Draft/Money order for Rs. 45/- drawn in favour of the DIRECTOR, LALIT NARAYAN MISHRA COLLEGE OF BUSINESS MANAGEMENT, MUZAFFARPUR. No claim for refund of money paid for Forms and registration will be entertained.
Last Date for Submission of Form :	Completed Application Form with a registration fee of Rs. 50/- addressed to the ADMINISTRATIVE OFFICER CUM REGISTRAR, LALIT NARAYAN MISHRA COLLEGE OF BUSINESS MANAGEMENT, MUZAFFARPUR, must reach the College on or before **12th March, 1988**.
Written Test :	Applicants having sent the completed Application Form must report at 9.00 a.m. on 20th March, 1988 for Written Examination for three hours duration to be held in Bihar University as well as in the College Campus.

DIRECTOR

UNIVERSITY NEWS

VOL. XXV DECEMBER 28
No. 52 1987
Price Rs. 1.50

A Weekly Chronicle of Higher Education published by the Association of Indian Universities

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Editor :
SUTINDER SINGH

ASSOCIATION OF INDIAN UNIVERSITIES

Sixty Second Annual Meeting

PRESIDENTIAL ADDRESS

By

Professor G. Ram Reddy

Prof. G. Ram Reddy, Vice-Chancellor, Indira Gandhi National Open University, delivered the Presidential Address at the 62nd Annual Meeting of the Association of Indian Universities held at Osmania University, Hyderabad on 16-17 December, 1987. The highly illuminating address was indeed a critical appraisal of the Indian University System. We have pleasure in publishing the full text of this Presidential Address for the benefit of our readers.

I deem it an honour to have the opportunity to address this distinguished gathring of Vice-Chancellors at the inaugural session of the Association of Indian Universities. I am particularly happy because this meeting is taking place at the campus of the University where I was a student and began my career as a teacher. Secondly, the Chief Minister of the State has agreed to spare some time to be in our midst today and on behalf of the Association and on my own behalf I would like to express my gratitude to him. I am also grateful to the President of the International Association of Universities and Dr. A. Christodoulou, the Secretary-General of the Association of Commonwealth Universities, who is an old friend of mine, for being with us on this occasion.

This meeting of the AIU is taking place in the aftermath of the adoption of the National Policy on Education by the Parliament and the policy is now in the process of implementation. This Association has had opportunities to discuss various aspects of the new Education Policy while it was being formulated and we have expressed our views on the subject. I am happy to record here that several of the views expressed by the Association and those expressed by the individual Vice-Chancellors find place as policy prescriptions in the new document. The doucument, therefore, reflects the consensus of views expresssd by the educationists in this country. What is equally important is that the Government of India have prepared an exhaustive document for implementation of the Policy. We should, therefore, record our gratitude to the Government of India for the efforts made in this direction.

The task of policy formulation is over and now begins the implementation. In fact, implementation is the toughest nut to crack. Several very well intentioned policies in the past could not achieve the desired results because of ineffective implementation. As one writer puts it, "What comes after a policy decision is just as important as the decision itself. Indeed, policy makers should use the likelihood of implementation as one criterion for evaluating policy alternatives". (Edwards & Sharkansky). The noted Jurist Nani Palkhivala, referring to the damage done by non-implementation of various programmes, has said, "the delay caused the country a loss of 1,20,000 crores of rupees in terms of GNP, exports lagged behind by Rs. 9,600 crores and agricultural production would have been higher by 54 million tonnes". Pointing out the resources available in the country including water, oil and labour, he said that if our Projects and Plans were based on 'time limit' and implemented accordingly, our per capita income would have been three times more than what it is now. This is just to impress upon the august gathering here the importance of implementation in policy making, for, the universities and the Vice-Chancellors have very important role to play in the implementation of the new Education Policy.

A gathering of the Vice-Chancellors like this provides an opportunity from time to time to look at critically the problems facing the universities and exchange ideas about solving them. The contributions of the Indian universities to nation building are many but still all is not well with our universities.

The ills of the Indian university are by no means a new phenomenon. Only, over the years, newer problems have emerged and those existing are attaining new dimensions. Several commissions and committees which have examined the university scenario especially during the post-independence period, have identified many lacunae in the existing system and have put forth recommendations to deal with them. The recent documents brought out by the Government of India, "The Challenge of Education" and "National Policy on Education" very boldly identify several of them and also refer to solutions. I have no intention here to reiterate these recommendations as they are well known to this august gathering. I shall, however, try to raise a few issues which, according to me, are very pertinent to the effective functioning and development of the Indian university system. These issues emerge essentially from two major dimensions of the functioning of our university system: one, its interaction with its external environment, and two, the dynamics within its internal environment. These two aspects are intricately intertwined with each other. University is after all a creature of the society contrived to serve certain specific socio-historical functions. The larger milieu, in more ways than one, lays down the ground rules determining the way university interacts with the political and economic reality and in turn determines the interactions among the various components of the university system. The interaction among forces from within the university system and without it, many a time, creates conflicts and crises in its functioning. Any smoothening of these interactions in order to make the functioning of university healthy and effective would require basic changes in the structure of the university system, as well as, probably, in the attitude the broader societal system has towards university.

But, how much has the Indian University system changed ? How far has it been geared to meet the changing demands from the larger society as well as the pressures from within its own internal environment? This is the issue I would like to take up as the central theme for today's talk.

In a developing society aspiring for structural changes through democratic means, university has a crucial role to play as an agent of change. It has to prepare a cadre of leaders equipped attitudinally as well as in terms of professional competence to initiate the process of change. It has also to serve as an agent of social criticism to call foul whenever the society transgresses into counter-progressive tendencies. For the university to perform these tasks effectively, it has to have essentially the sensitivity to comprehend and even anticipate the changing social reality and a dynamism within its organic whole which can make its responses quick and effective. Thus, to be an effective agent of change, university has itself to be open to changes in its internal structure.

A cursory look at the Indian university system would reveal that it has undergone very little change since 1947; some even maintain that this has been so ever since the first Indian universities were established in 1857. Why has this been so? The answer to this lies, to my mind, in the peculiar legacy of the Indian university. Growth of the Indian university system during the colonial period was symbolic of the growing influence of the anglicised middle class—the class of 'Babus'. The transfer of power in 1947 did not really bring about any structural change—the anglicised middle class continued to wield as much power as they used to before 1947. This meant that the historical function which the Indian university system was to serve continued more or less unchanged even after independence. All that the changed situation demanded of the Indian University was for it to grow in quantities, and to maintain the status-quo so far as the structure was concerned. The post-independence period saw several deliberations at articulating an exhaustive agenda for national development. And a lot was expected of the Indian university system. However, the response of the university system to this expectation has been rather slow and at times disappointing. The

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ain reason for this is that the class which dominated e Indian university system had its interests slightly variance with the main thrusts of national developent and hence, the university system got itself more or ss cut off from the national mainstream. This plains to a large extent, the stagnation and the lack f dynamism of the Indian university.

One major indication of the inherent stagnation of e Indian university system is its unchanged elitist haracter, which needless to say, is quite an anachroism in a developing democracy espousing socialist leals. The Indian university even today remains an xclusive institution not accessible to many. The nrolment figures in the Indian universities have icreased impressively over the years. In spite of this icrease, the proportion of tertiary level students to he population in the relative age group of 17-23 is nly 4.8%. In the total population, in every hundred, here are only 3 who have some kind of post seconlary education. Thus, university education still emains the exclusive privilege of a few. Despite the enerous provision of scholarships, access to education s still limited. Thus, the Indian University seems to nsure the perpetuation of limited access to higher ducation.

The solution to this problem does not necessarily ie within the purview of the university. The problem s only symptomatic of certain basic social ills. However, it reflects on the basic disinclination of the uniersity system to be flexible and respond to the changng needs. The course and curricula in vogue in the ystem do not respond favourably to the needs of the ociety; their relevance is often questioned. For insance, where the need is for short term middle technoogy courses, most universities take pride in offering ong term high technology courses. As a consequence f this, we find there is a gross mismatch between upply and demand; whereas we have a surplus of ngineers, there is a dearth of technicians.

Another indication of the rigidity of the Indian niversity is the unchanged and inflexible curricular tructure. This manifests essentially in two ways: one s the continuance of the age-old single point entry, by irtue of which the aspirant has to enter the system igidly at a certain point and has to continue throughut. Any kind of break, discontinuance and a possible eturn to studies is discouraged. The concepts of lifeong education and continuing education are still only reached, but seldom practised. The second manifestaion of the curricular inflexibility is the continued adherence to the dictum that university education is worth its name only if it is a full time activity and if it involves face-to-face teacher-student interaction. Many still think that distance education is not quality education and modern communication technologies are not useful for providing education. In fact, this kind of orthodoxy precludes the possibility of the Indian university opening its portals to the less-privileged, thus reinforcing its classical ivory tower image. Happily the National Policy on Education is categorical and forthright on these issues and proposes introduction of flexibility and innovations in the system.

There is one other aspect in which the Indian University has got stuck up in time. And that is with regard to classification of knowledge into disciplines. The history of classification of knowledge into disciplines can be traced right back to the industrial revoluion. The division of facilities and organisation of curricular programmes were traditionally along disciplinary lines in most universities. But, the post-war period saw a great deal of change in this in most western universities. It was increasingly recognised that reality is unified and so is knowledge. Therefore, curricular programmes and research became increasingly problem based or phenomenon based and less and less dependent on the traditional disciplinary paradigms. But, the Indian universities still continue to have unidisciplinary programmes. Inter-disciplinary approach in curricular programmes has failed to succeed mostly because the teachers have failed to transcend their disciplinary affiliations and look at knowledge in a unified perspective. So is the case with multi-disciplinary research programmes involving collaborative research efforts across disciplinary boundaries. In this atmosphere wherever inter-disciplinary courses have been introduced, they had to face several difficulties particularly with regard to the non-availability of jobs for those who have studied these courses. The traditional rigid disciplines are hesitant to recruit them. It is like the case of inter-caste marriages in our caste ridden society, where not only the marriage is questioned, but also the off-spring of such a marriage is disowned by both the castes !

A general observation one could easily make of any Indian university today is that its quantitative expansion is beyond the limits that its basic infrastructure could possibly contain. Its growth is sporadic, uncontrolled and with no planning whatsoever. No university system in India seems to have a concept to its own optimum size. The rate at which many Indian universities are expanding in students strength is fantastic. It is so uncontrolled and uncontained that one fears that they could any day explode like an overgrown 'Supernova'. This needless to say, brings down drastically the quality of education imparted. In addition to this, it entails serious managerial problems too. As I have mentioned elsewhere "both in terms of quality and quantity, the present-day Indian university is much more difficult to govern than its counterpart three or four decades ago: what was once considered to be a simple institution has become very complex".[1]

One direct consequence of the unplanned quantitative expansion of Indian universities is failure of the campus concept. The campus concept is meaningful so long as university is considered a community of scholars, comprising teachers and students constantly interacting and generating a dynamic academic atmosphere. I am afraid, many Indian universities today cannot be regarded as representing a community of scholars. First of all, the level of scholarship has come down drastically with quantitative expansion. Secondly, a group of people become a community only if they constitute an organic unity.

In this respect, our compus hardly houses a 'community' by any definition of the term. The spirit of sharing and collaboration seems to be sadly absent. As Gaudino observed in his rather perceptive analysis of the Indian campuses, "It is not an association of equals, even among teachers. It is felt that equal treatment of all tends to disrupt all authority and discipline. Parity is an unnecessary, perhaps disturbing, risk in study, in teaching, in research, in the extra-curricular"[2] The University after all reflects the current values of the society. One, therefore, wonders whether there is a need to create such isolated clusters called campuses, and bestow them with a lot of sanctity. I strongly feel that instead of creating mammoth campuses in selected centres, we should decentralise them into smaller unit such as colleges. I am aware that campus concept is regarded as some kind of sacred cow and that whatever I say may be construed as heresy. I must clarify that I am not one who disregards the academic value of a 'good' campus, if and only, if it provides the necessary supportive climate for academic interaction among teachers and students. Since such a climate seems to be unfortunately absent in many of our campuses, I am for dividing them into small, manageable units. I believe, it is easier to develop these small units into ideal campuses.

Another characteristic feature of the Indian university, which has not changed much sicne 1947, is its highly centralised governance. It is only apparently federal. Most Indian universities being teaching-cum-affiliating ones, the bulk of the management efforts are directed at and the decision-making monopolised by the central campus which caters to only a small proportion of students. The affiliated colleges which cater to the majority of students are often neglected and under-represented in the process of decision-making. It is only imperative that quite a number of large affiliated colleges should be granted academic autonomy. This, to a great extent, would remedy the rather lopsided managerial structure that obtains in most teaching-cum-affiliating universites in India. I feel, this is the apt time to cut the umbilical cord between university and college. The colleges should be left to live or perish on the basis of the quality of teaching, research and extension that each one of them is capable of. In this connection we must welcome the bold suggestion in the National Education Policy to give autonomy to colleges. The decision of the UGC to grant autonomy to about 500 colleges is a welcome step and the trend should be encouraged. The affiliated colleges should be liberated from the bondage to the respective universities.

The policy making bodies of the Indian University has remained the same for years. No serious attempt has been made to assess the relevance of these bodies in today's university. The Senate, the Syndicate (Executive Council) and the Academic Council are part of the structure of most of the Indian Universities. And among them they take years to arrive at many decisions. It is not without reason that the committee which looked into the working of Central Universities, with which I had the privilege of being associated, raised the issue whether we need to retain policy making bodies such as the Senate in the social context in which our universities are functioning today. The autonomy of university has eroded so much that the need for a body like Senate is questionable.

The central figure in the university system need to be the Vice-Chancellor. He commanded a lot of respect and enjoyed powers to a considerable extent. What about the position of the Vice-Chancellor in today's Indian University? It is to be remembered that although the formal structure of this institution remained more or less the same, the substance has greatly eroded. The hold of the polity on the Indian University has increased considerably. Power groups among teachers and students with their own vested interests have lot of say in the functioning of today's Indian

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1. Reddy, G.R. 'University Administration in India—Some Critical Issues'. *The Indian Journal of Public Administration*, XXXVI (3), 1980.
2. Gaudino, R.L. *The Indian University*, Bombay: Popular Prakashan, 1965, p.7

niversity. Yes, the Vice-Chancellor continues to be e central authority. Talking of Vice-Chancellors, it is ot uncommon to hear being mentioned such great ames of the past, like Dr. S. Radhakrishnan, Sir shutosh Mukherjee, Sir C.P. Ramaswamy Iyer, Sarar K.M. Panicker, Sir Maurice Gwyer, et al. They re mentioned to highlight the point that they were reat scholars and conducted the affairs of university ith great dignity. By implication it is meant that preent day Vice-Chancellors are not able to rise to such reat heights. This is certainly not true in several cases oday. In recent years there have been several disinguished men such as Dr. Malcolm S. Adiseshaiah, Dr. K. N. Raj, Mr. G. Parthasarathy, Dr. George Jacob, Nawab Ali Yavar Jung, Dr. D.S. Reddi, Justice Gajendragadkar, et al, who have functioned as chief executives of the universities. In terms of academic excellence they are in no way inferior to the stalwarts of yesterday. Hence, it is not fair to compare today's Vice-Chancellor with that of yesteryears. What makes him look 'smaller' is that the context in which he functions today is too complex, and very different. If you were to bring some of the stalwarts of the past and ask them to administer the present day Indian University, I am sure, several of them would not be able to complete even their first term, and would flee from the job! Responsibilities of the present day Vice-Chancellors have increased enormously, but they are not commensurate with the authority they enjoy. Looking at the position of the Indian Vice-Chancellor, it is said that holds power in nervous hands. He is like the Samson with ants in his pants.

The situation has changed considerably even in countries like the United States. In the aftermath of Berkeley, Columbia, Harvard and Kent State, writes Warren Bennis, a University President stays in office less than five years on an average; and is usually glad to retire. Annual turnover of University and College Presidents has jumped nearly 30 per cent in the last three years. In the first two months of 1970, new Presidents were named at 42 Colleges, while 100 resigned during the first six months of 1970. Warren Bennis compares the job with that of a Hockey Referee. I don't think he is far off the mark. The work is rough, basically exhaustive and even dangerous. University Presidents may lose fewer teeth than Hockey officials, but there have been a number of heart attacks. The job is so complex and difficult that the head of a modern university is required to combine in him a variety of qualities. A modern University President is expected, writes Warren Bennis, to have practical vision, a good track record in administration and national prominence as a scholar. He must be a good public speaker, fund raiser, writer, analyst, friend and colleague, manipulator of power, planner, co-woker, persuader and disciplinarian. He must have an attractive family and an indefatigable and effortlessly social wife. He must be a Money Man, Academic Manager, Father Figure, Public Relations Man, Political Man and Educator.[3] As one Harvard man put it, "He must be a messaiah with a good speaking voice..." Herman B. Wells, former President of Indiana University, put it more forcefully: "He should be born with a physical strength of a Greek athlete, the cunning of a Machiavelli, the wisdom of a Solomon, the courage of a lion, if possible. But in any case he must be born with the stomach of goat."[4]

While this is the position in the United States, I don't know how to describe the situation in Indian universities. To put it mildly the main job of the Vice-Chancellor of the Indian University is crisis management and he is forever sitting on a volcano not knowing when it will erupt. The job of the Indian Vice-Chancellor is complex, rough and even unpredictable. It is a health hazard. As one incumbent put it, when we appoint a Vice-Chancellor we must have a thorough health check up of the man and keep a record of it. And when he has completed three or four years of his tenure again a thorough health check up must be done of the person. During these years he must have surely contracted such ailments like ulcer, chronic headache, diabetes, blood pressure and even heart trouble. If he has not developed any one or more of these it will not be unreasonable to presume that he has not taken his job seriously. His family may even ask who will pay for the damage! Despite all these, the job continues to be held in high esteem by the society outside but the insiders know that the form is without much substance.

Today's university comprises a complex enterprise of a large number of students, teachers, administrators and other staff members. The interaction among these people make the whole process extremely complex, much more than managing a large industry. In this context, it is rather surprising to note that the decision makers in the university are basically amateurs. Whether it is the Principal, the Registrar or the Vice-Chancellor, they are all amateurs in educational administration. They enter their job without adequate preparation. One wonders whether such people can tackle the complex university administration of today. There was a time when training was not considered essential for a

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[3] Warren Bennis, *The Leaning Ivory Tower*. London: Jossey-Bass 1973, p.17.

[4] Ibid.

Principal or a Lecturer. It is heartening to note that a change in this view is evident today. One must welcome the establishment of institutions such as Academic Staff Colleges. Preparations are in progress at the national level for the development of programmes for administrators in higher education. I hope the Academic Staff Colleges would not confine their training to the newly recruited Lecturers but also include the training of academic administrators like Principals and others.

For providing effective leadership to a university, a Vice-Chancellor needs to appreciate the fact that university is a unique social institution with its own peculiar characteristics. Just as every society evolves its own culture, large organisations also have their own cultures which are evolved by the nature of its functioning. Thus universities have their own culture the main characteristics of which are : tolerance of dissent, idealism, lack of hierarchical rigidities, etc. If managements of the universities blindly follow the principles of general administration they will be inviting serious trouble for themselves. For instance, the following incident occurred in an American University where an able military organiser had taken over as the President. He appeared to have expressed surprise that 'the employees' did not fall in with an order that seemed appropriate. He was then reminded by a Nobel laureate Professor that "Sir, you may not be aware of it, but we are the university". Academic culture is something which is to be lived in and felt; it takes a long time for an outsider to understand and appreciate the culture of universities. If they do not make distinction between the general administrative culture and the academic culture of universities, they would fail to understand the university system itself. Quite often outsiders are shocked to find several deviations from the norms of general administration in the universities; one may even define it as a 'loose system' but that is what an academic system is and ought to be, provided its looseness does not become detrimental to the realisation of the objectives of the system.

Before I conclude, I would like to refer to an important problem facing the Indian Universities today, i.e., paucity of finances. This has been a chronic problem in many universities. It is with great difficulty that many universities manage to disburse salaries of the employees in time each month. There is hardly any money left for improvements and development. In this connection I invite the attention of this august gathering to the view expressed by the Vice-Chancellors of the Southern zone at a recent meeting. They have said that most of the State Governments are now earmarking 25% of their budgets for education and the resources are not "elastic". As such the allocation made by the Centre should be stepped up. Further, block grants should be clearly earmarked for higher and technical education. They have further suggested that Union Government's allocation for education, which is now only 1.4% of its budget, should be increased. The issue of university finances has been discussed several times by this Association. Still not much has been achieved in this area. In some States the financial position of the universities is miserable. I feel that immediate attention needs to be paid to this subject not only by the Ceniral and State Governments but also by the UGC. One way of solving this problem is to create a body, which will look into the financial requirements of the universities from time to time. There is an urgent need for establishing a University Finance Commission once every 5 years to go into this problem and make recommendations to the Central and State Governments. So long as universities have the financial worry, they would not be able to pay attention to other aspects of their work. They need to be put on sound footing.

I do not have the details of the recommendations of the Conference of the Southern zone Vice-Chancellors but some of their recommendations relating to the administrative structure, as they appeared in newspapers, deserve closer scrutiny and personally I am in favour of their adoption. I hope the AIU would give serious thought to these recommendations.

I have dealt at great length with some of the problems facing our universities and they go to prove that today's Indian university is "a high pressure organisation" and it could destroy not only its Vice-Chancellor but also the objectives for which the University stands. It is true that they are "tortured institutions" at this point of time in our history. Should they continue to be so ? My own view is that they need not remain such tortured institutions. If certain structural changes are made in them they would go a long way in improving the situation. Part of the answer lies in bringing about radical changes in the management structure of these universities. Dr. V. K. R. V. Rao once said, "It is unfortunate that the problems related to the governance of universities and colleges have not received adequate attention. Educational administration is generally tradition based and tends to rely on rules, procedures and techniques which have not changed over the years. A static organisation cannot meet the needs and challenges of a dynamic situation." Responding to the dynamics of the situation is the crux of the problem. Management of the university system needs to be taken up more seriously; philosophy of amateurism cannot serve the complex needs of today. □

ACADEMIC STANDARDS

The recent Supreme Court judgement that declared the Andhra Act establishing a commissionerate of Higher Education null and void, has once again brought the question of determination and maintenance of academic standards in bold relief. This was first brought to notice in a recent article by Dr. Amrik Singh who had regretted that the judgement had "divested the States of the power to regulate standards, monitor and evaluate the academic programmes, evolve a perspective plan for the development of higher education in the State, coordinate the academic activities of various institutions......" The issue again figured prominently at the National Conference on Role of Universities in Implementation of New Educational Policy held in conjunction with the 62nd Annual Meeting of the Association of Indian Universities at Osmania University, Hyderabad on 18-19 December, 1987. In view of the over-riding importance of the subject we are reproducing Dr. Amrik Singh's article—"Education Tangle—UGC Vs States" for its historical significance. We are also publishing "State Councils of Higher Education" a paper presented at the Conference by Prof. T. Navaneeth Rao, Vice-Chancellor, Osmania University, Hyderabad for its contemporary relevance.

Education Tangle : UGC Vs States

Amrik Singh*

On August 13, the Supreme Court delivered a judgement which has such far reaching implications in regard to the Centre-State relationship in respect of education that either the judgement would have to be reviewed by a larger bench or the Constitution would have to be amended.

It started like this. Some time in 1986, Mr. N. T. Rama Rao, Chief Minister of Andhra Pradesh, appointed a committee of four Vice-Chancellors and one official to undertake a critical survey of higher education in the State. A few months later this committee submitted a report and as an outcome of it, the State established a commissionerate of higher education. According to its Act, higher education was defined as post-matriculation education and, accordingly, the Director of Higher Education, the Secretary, Board of Intermediate Education and the Secretary to the Board of Technical Education were placed under the administrative control of the commissionerate.

Legislative Power

This Act was challenged by the Osmania University Teachers' Association on the ground that the Act was only a duplication of the UGC Act and the State had no legislative power to enact it since it squarely fell under Entry 66 of List I of the distribution of powers as between the Centre and the States.

The Andhra High Court upheld the validity of the State Act but the Supreme Court has declared it null and void. While doing so the Supreme Court carried out a comparative analysis of the UGC Act and the Andhra Act and came to the conclusion that the latter was beyond the legislative competence of the State.

The judgement says : The Constitution of India vests Parliament with exclusive authority in regard to coordination and determination of standards in institutions for higher education. Parliament has enacted the UGC Act for that purpose. The University Grants Commission has, therefore, a greater role to play in shaping the academic life of the country. It shall not falter or fail in its duty to maintain a high standard in the University....It is hoped that University Grants Commission will duly discharge its responsibility to the nation and play an increasing role to bring about the needed transformation in the academic life of the Universities.

Common Feature

This obiter dicta, so to speak, came after the Supreme Court had noted the fact that "the defects and deficiencies pointed out by the High-Power Committee (referred to above) in regard to higher education may continue to remain to the detriment of the interests of the State and the nation. Such defects in the higher education may not be an isolated feature only in the State of Andhra Pradesh. It may be a common feature in some other States as well". In other

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Former Secretary, Association of Indian Universities.

words, the court recognised that the need for the kind of thing that the Andhra Act undertook to do did exist. Only, according to it, the power could not be exercised by the State but had to be exercised by the Centre operating through the UGC.

This judgement of the Supreme Court has created a situation in which the UGC, for whatever reasons, will not act and a State, if it wishes to act, is prevented from doing so. If this interpretation is to hold ground, the States are divested of the power to regulate standards, monitor and evaluate the academic programmes, evolve a prespective plan for the development of higher education in the State, coordinate the academic activities of various institutions and, in short, undertake any such thing which falls within the purview of the UGC. To what extent the States will accept this position is one question. To what extent such a decision will contribute to professionalism and development of higher education in the country is another question.

Two pertinent facts may be mentioned here. One is a recommendation in the National Education Policy that State Councils of Higher Education might be set up as statutory bodies and their major functions should include preparation of consolidated programmes of higher education in each State, initial scrutiny of the development programmes of universities and colleges, monitoring the programmes of implementation and assessment of performance of institutions and so on. These and several other functions have been listed in the Programme of Education adopted by Parliament in August, 1986.

In pursuance of its recommendation, the UGC appointed a Committee consisting of four Vice-Chancellors, five Secretaries of Education from different States and some officials to work out guidelines for setting up State Councils of Higher Education. The Committee has finalised its recommendations and recommended the establishment of such State Councils. A comparison of what the UGC Committee has recommended with what the Andhra Act (now declared ultra vires) contained in the manner in which the Supreme Court judgement carried out a comparative analysis of the UGC Act and the Andhra Act would show that there is hardly any significant difference between the two. In certain cases the same phraseology is used in both the documents.

On Wrong Foot

While the UGC guidelines are ready, those have not been sent out because meanwhile this judgement came and the UGC did not wish to be caught on the wrong foot. For a while, therefore, it has stopped in mid-track. Another thing. Unlike Andhra which did not consult the Centre while drawing up the Bill, Tamil Nadu, which also has taken an initiative along similar lines, has provided in the Bill that the exercise was being undertaken in support of the work of the UGC. The Tamil Nadu Assembly has yet to consider that Bill but meanwhile the whole thing has been thrown out of gear by this decision of the Supreme Court.

Crucial Issue

One question that one can legitimately raise is why the Supreme Court did not ask the Department of Education or the UGC or the Association of Indian Universities (AIU) to express an opinion in the matter. The Department of Education should have been interested in the entire issue for obvious reasons. The latter two bodies have a tradition of asking to become parties to the consideration of such crucial issues when they come up before the Supreme Court. For instance, after the anti-reservation agitation in 1981 in Gujarat, all the universities in that State had promoted all the students en masse to the next class. This was challenged by a student and when the matter came up before the Supreme Court in 1982, both these all-India bodies asked to and did become parties to the suit. Following that precedent, why should it have been difficult for these two organisations to ask to be heard in this matter ? Surely the Supreme Court would have accepted such a request and for all one knows the decision might have been different.

It may not be without interest to mention that three weeks after the judgement was given, neither the Ministry of Human Resource Development which handles Education nor the UGC, nor the AIU had even a copy of the judgement of the Supreme Court.

While it is for the Centre and the States to sort out the issue between them, it should not be out of place to refer to the academic cripple called the UGC. The problems in higher education arise precisely from the fact that though established in 1953, i.e. within half a decade of the independence of the country, the UGC has been unable to perform its role except as a conduit of transfer of funds from the Centre to the States. That is the role allotted to the UGC in Britain. In India the role allotted to the UGC is much more comprehensive. One is to make funds available to universities all over the country and the second is to ensure what the Constitution of India describes as coordination and determination of standards.

Before the UGC was established, the universities repeatedly argued that it was not for lack of effort but fot lack of funds that they were unable to perform better. Accordingly, for the first time in any country in the world, a grant giving body was vested with the powers of academic coordination. For anyone to equate the UGC in India with the UGC in Britain, is to misread the role of the UGC. The Indian UGC is a body whose primary task is to coordinate and determine standards and funds made available to it are to be used for that primary task. What has happened, however, is that the secondary task, i.e. providing funds to universities, has become primary and the primary task has been allowed to go by default.

Sad Truth

This is the sad truth. May be the Supreme Court acting within the parameters of the law was right to say that this is a task which belongs to the UGC and cannot be done by the States. But the ground reality is that the UGC is not able to perform and, as per the latest decision, the States, such of them as wish to perform, will not be allowed to do so. What is to happen in that case ? It is not for the court to consider this issue but the governments, both Central and State governments, cannot get away from the obligation to ensure that higher education is not allowed to flounder.

Do the teachers also have a stake in the issue ? The issue need not have been posed in this manner but for the fact that so far they have seldom given much evidence of concern with issues related to policy making in the larger sense of the word. In 1983, for instance, the Maharashtra Government took over, so to speak, the right to affiliate colleges from the universities. If there was any protest by teachers, it was so feeble that one never heard of it. A little later when three medical colleges were established in that State on the capitation fee basis, the junior doctors went on strike but the rest of them did not, presumably because it was assumed that the matter concerned the doctors and not the other teachers. No wonder the strike fizzled out after a month.

Policy Making

These two instances in recent years point to the unflattering conclusion that teachers are interested in higher wages and better conditions of work but hardly in policy making. When it comes to confrontation however, they complain about the powers of the bureaucracy. Nobody stops to ask the question how the bureaucrats come to exercise powers. It is through a process of default that they come to do so; teachers do not feel interested in policy issues and so somebody has got to take the decisions. Since it is the responsibility of the officials to keep the system going, they end up by taking decisions. If in certain cases those decisions are unacceptable to academics, they set up a howl about the powers of bureaucracy.

This issue however is so important that teachers as a whole must give serious thought to the implications of what has been decided by the Supreme Court. If, as they say, war is too serious a business to be left to generals, education is too serious a business to be ignored by academics. Therefore, let no one say that a major development in Indian higher education occurred at a time when they were so busy looking after themselves that they forgot to attend to the problem of how higher education is to be organised. ☐

UNIVERSITY NEWS

A Weekly Chronicle of Higher Education

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State Councils of Higher Education

T. Navaneeth Rao*

India has a long history of development of education. It was one of the advanced countries of the world at one time contributing significantly to the growth and development of knowledge. Takshasila and Nalanda enjoyed reputation as great seats of learning and attracted scholars not only from the different parts of India but also from different parts of the world. In the modern period education system in India was influenced by the British who introduced western type of education in the 19th century by establishing universities and colleges. The system which India inherited at the time of independence was mostly the system of higher education implanted by the Britishers.

During the last four decades after independence education has expanded considerably and made rapid strides to meet the growing demands of the community. Let us have a look at the situation of higher education in Andhra Pradesh, alphabetically the first State in India. At the time of formation of the State in 1956 there were three universities, 47 colleges with a student enrolment of 21,200. By 1987 there are 12 universities with 354 colleges with an enrolment of more than 3,00,000 students. Expenditure on higher education was hardly 1 crore of rupees in 1956 and by 1987 there was a hundred fold increase with a budget provision of approximately Rs. 190 crores. In 1956 the percentage of allocation to higher education to the total educational budget was 8.66 per cent whereas it rose to about 20 per cent during the last three decades.

Educational origins, developments and achievements vary from state to state. But the broad patterns are more or less similar. If this is the situation in the states, the situation at the national level is no different. At the time of independence, there were 17 universities and 636 colleges with a total enrolment of 2,38,000 students. There has been an enormous expansion of higher education eversince due to positive measures initiated by State and Central Governments. Now there are over 160 universities (including deemed universities). The number of colleges rose to 5,246 with a total enrolment of 33,59,323 students. The per capita expenditure in the universities and institutions of higher learning was hardly Rs. 2,000 in 1950-51 and this rose to about Rs. 6,000 by 1983-84. The aim has been to remove the deficiencies and inadequacies in educational system and to tailor the system to meet the requirements of national development. Particularly to provide access to those who were denied access hitherto.

The foregoing would indicate that the education in India has expanded considerably over the last few decades. But this quantitative expansion has created several problems in relation to the quality of education imparted. The "Challenge of Education" has rightly noted that the facilities in the 5,000 odd colleges in the country vary widely and most of them are not viable qualitatively. The report of the Education Commission (1964-66) had noted, "there" is a feeling in India that the situation in higher education is unsatisfactory and even alarming in some ways". Rapid expansion has resulted in lowering the quality and the average standards have been falling. Similarly the University Grants Commission's document "Development of Higher Education in India—A Policy Frame" noted that the history of Indian education is a picture of both light and shade, of some of outstanding achievements along with many outstanding failures. It is evident, therefore, that all is not well with our educational system and the contributions of higher education are far below the expectations. It is in this context the National Policy on Education-1986 has rightly observed that urgent steps will have to be taken to protect the system from degradation. To operationalise this policy the Programme of Action on the National Policy on Education suggests the constitution of State Councils of Higher Education to coordinate the programmes of development of higher education.

In India universities are established by State/Central legislatures and are autonomous or independent entities each with its own programmes and functions. Over the years there has been an increase in the number of Universities, as we have seen earlier, which lead to needless duplication of educational services. Universities offered similar programmes and there were instances where academic programmes of one university were adopted verbatim though the courses were totally irrelevant and inappropriate to the local requirements. Similarly the number of colleges expanded and in many cases they were created to

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Vice-Chancellor, Osmania University, Hyderabad.

satisfy the ambitions of the politicians with little regard to costs or educational needs and requirements of the state. One finds multiplication of educational institutions and duplication of educational programmes which neither take into consideration the developmental needs of the State nor satisfy the demands of the student community. Thus there has been an unplanned, uncoordinated and haphazard growth of higher educational institutions in the country. This has contributed to the fall in the standards both in quality and viability.

No doubt in India the planning, coordination and development of higher education is the responsibility of several institutions. Firstly, there is the University Grants Commission, which was established by an Act of Parliament in 1956 to take steps for the promotion and coordination of university education and for the determination and maintenance of teaching, examination and research in the universities. It allocates funds and grants to the universities for the development of the activities keeping in view their financial needs, standards attained and the national purpose they serve. It also advises the central and state governments on the measures for improvement of university education. But unfortunately over the years University Grants Commission has not been able to exercise the powers of coordination and regulations effectively, either because of quantitative expansion or problems created by the geographical spread of higher educational institutions. For example, the correspondence institutions in India started functioning from 1962 onwards, and today over 30 universities offer courses through correspondence and their standards are far below the expectations. The University Grants Commission has not been able to bestow its attention, therefore standards in these correspondence institutions have fallen considerably. Similar situation can be noticed in other areas as well viz., fiscal infrastructure, curriculum standards, educational programmes offered etc. Instead of maintaining and determining standards the University Grants Commission has primarily concentrated on the supportive function of disbursement of funds. This has serious consequence for academic standards in Indian Universities. It is only recently the University Grants Commission has realised the need to remedy the situation. But the task is stupendous.

At the state level the state legislature which establishes these universities is expected to ensure accountability of the universities and colleges. But unfortunately the legislatures also are no longer in a position to coordinate the activities of the universities and colleges either because the time at their disposal is too short or they do not possess the necessary expertise to appraise the relative needs and expansion of several institutions. Therefore the burden falls on the executive departments of education which has no expertise to take up this work. It is evident that though the growth of higher education was enormous there has not been proper planning and coordination. It is with a view to ensure systematic expansion of higher education and to improve the quality, the National Policy on Education has proposed the creation of State Councils of Higher Education. There is need for general understanding about certain fundamental aspects of higher education if the State Councils of Higher Education have to undertake functions effectively. They are:

(1) Rigidity in the educational system is not desirable;
(2) Freedom and initiative must be left to the higher educational institutions;
(3) The institutions must make very effective use to valuable and scarce resources;
(4) They must avoid inferior quality, wasteful administrative practices and unnecessary duplication of functions and facilities;
(5) Higher educational institutions have certain objectives and goals and they are accountable to the society for the realisation of those goals;
(6) Coordination of higher education is not only desirable but is inevitable; and
(7) Coordinated and planned growth would contribute for social benefit.

The society which pays for higher education has a right to call the tune. It is in this context of inevitable need for coordination and the failure of the existing mechanisms to ensure planned and systematic growth of education in the country that the State Councils of Higher Education are being proposed.

The State Councils can take any of the three organisational patterns. Firstly, Governing Board, with functions of coordination, regulation and control of all higher educational institutions in the state; Secondly, Voluntary Board wherein the institutions of higher education come together on a voluntary basis and coordinate their activities; and Thirdly, a Coordinating Board, which would be empowered to coordinate and control a few select activities without administrative powers of governance. Of the three patterns, the first pattern would be simply undesirable as it would become a supra agency directing the universities and colleges. In such a case the universities would cease to enjoy the autonomy which they are clothed with. This is also an issue on which university academics are very sensitive and react—in fact they reacted—very violently. The second alternative i.e., voluntary type of agency has a very limited scope for success. In Andhra Pradesh there have been meetings of Vice-Chancellors of state Universities for several years, which are euphemistically called Vice-Chancellors' Conferences, but they have not been successful to eliminate educational waste and duplication. They have been concentrating on some common administrative problems than coordination of academic programmes of the universities and colleges. If history of cooperative movement in India is any guide, it is very difficult to presume that voluntarism and cooperative effort would be successful in the field of higher education. We are left, therefore, with the third alternative i.e., the coordinating type of agency for purposes of coordination of higher education.

The State Councils of Higher Education should, therefore, essentially be coordinating bodies without assuming any executive power or powers of governance. Their major role should be to provide guidance for further expansion and consolidation of higher education in the state. The main functions of the Councils should be as follows :

1. Planning Functions

The Councils should be responsible for establishing the goals and policies of higher education and prepare programmes for their realisation keeping in view the overall state priorities and perspectives. They should provide help and assistance to the universities and colleges in the realisation of the goals and they should prepare perspective plans for the overall development of higher education in the state.

2. Financial Functions

They should determine the financial needs of colleges and universities and allocate the grants received from the Central and State governments and other sources. They should play more or less a similar role as that of University Grants Commission vis-a-vis central universities.

3. Academic Functions

Their major academic function is to devise and maintain standards in higher education and to create conditions for flowering in innovations and creativity in curriculum, courses, evaluation methods etc. They should also create conditions for quality research keeping in view the state's special requirements. The councils should oversee that all colleges and universities do not rigidly replicate educational programmes in the name of uniformity. They must create conditions for diversification and differentiation of academic programmes. They should also enable the institutions to undertake extension activities to share knowledge and skills with the community. They should allocate functions and programmes to institutions to maximise educational opportunities while creating a system out of several institutions.

4. Advisory Functions

They should advise the governments in the allocation of grants, assist in the preparation of rules and regulations governing the institutions to make them viable and self-reliant.

5. Finally, the Councils should ensure that adequate physical and infrastructural facilities are available in the educational institutions so as to make the instruction effective. They should also take steps to provide those infrastructural facilities in the institutions.

It would be presumptious on our part to assume that educationists and others would welcome the creation of State Councils of Higher Education with open arms. There may be some who would oppose any such agency on the ground that it would seriously curtail institutional autonomy. The other argument would be that coordination stiffles initiative, results in excessive standardisation and leads to educational mediocrity. They believe that autonomy and competition between educational institutions would be more productive educationally than forced coordination from above. The past experience is a clear indicator that these fears are not true and present system which has shown the signs of weakness and wastage may further degenerate.

In conclusion, it can be said that the State Councils of Higher Education have onerous responsibilities to play to strengthen higher education in the states keeping in view the needs and requirements of the community. They should play more or less a similar role which is now entrusted to University Grants Commission to maintain standards and regulate the growth of higher education without sacrificing quality. The universities and colleges enjoy freedom, autonomy and initiative and the Council should not do anything to impair or sacrifice these closely guarded institutional and academic freedoms. They should also guard itself from becoming a regulating agency in their anxiety to strengthen higher education. Once these precautions are taken there is no reason as to why the State Councils of Higher Education should not become viable mechanisms to maintain quality and standards in higher education serving the interests of the community in which they operate.

Annexure

The Functions of the State Council of Higher Education

1. Academic Functions

(i) To encourage and promote innovation in curriculum development, restructuring of courses and updating of syllabi in the Universities/Colleges.

(ii) To promote and coordinate the programmes of autonomous colleges and to monitor their implementation.

(iii) To develop entrance examination for admission to institutions of higher education and render advice on admissions.

(iv) To devise steps, to improve standards and conduct of examinations of the University and suggest necessary reforms.

(v) To facilitate training of teachers in Universities/Colleges.

(vi) To promote publication of quality text-books, monographs and reference books.

(vii) To develop programmes for greater academic cooperation and interaction between University teachers and college teachers and to facilitate mobility of students and teachers within and outside the State.

(viii) To encourage sports, games, physical education and cultural activities in the Universities and colleges.

(ix) To encourage extension activities and promote interaction with agencies concerned with regional planning and development.

(x) To prepare over view report of the working of the Universities and Colleges in the State and to send copy of the report to the University Grants Commission.

2. Planning and Coordination

(i) To prepare consolidated programmes in the sphere of higher education in the State, taking into consideration the guidelines that may be issued by the UGC from time to time and to associate in their implementation and to assist in the implementation of the guidelines issued by the UGC from time to time keeping in view the overall priorities and perspectives of higher education in the State.

(ii) To assist the University Grants Commission in respect of determination and maintenance of standards and suggest remedial action, wherever necessary.

(iii) To offer its comments and suggestions on development programmes of Universities or colleges in the State keeping in view the overall needs, priorities and perspectives of higher education in the State as and when they are referred to the Council by the University Grants Commission or the State, as the case may be.

(iv) To evolve perspective plans for development of higher education.

(v) To monitor the progress of implementation of development programmes.

(vi) To promote networking of the educational institutions among themselves and with industrial, research and other related establishments.

(vii) To formulate the principles for location of new institutions to be set up in the State.

(viii) To suggest ways and means of augmenting additional resources for higher education in the State.

3. Advisory Functions

To advise the State Government :

(i) in determining the block maintenance grants and to lay down the basis for such grants;

(ii) on setting up a State Research Board (S.R.B.) so as to link research work of educational institutions with research agencies and industry, keeping in view the overall research needs of the State;

(iii) on the statutes and ordinances of various universities in the State and on the statutes proposed by the Universities in the State;

(iv) to streamline the Higher Education;

(v) to make new institutions self-sufficient and viable;

(vi) on the policy of "Earning while Learning";

(vii) to perform any other functions necessary for furtherance of higher education in the State.

Budget

The State Government may pay to the Council in each financial year the grants which are to be administered by the Council after getting appropriation made by the Legislature. The Council should prepare its own budget, the estimate of receipts and expenditure and approach the State Government for approval. □

Course on Women's Studies

Seven Universities in the country have introduced women's studies in their curricula, for the undergraduates, to change society's attitudes and values towards women's role and rights. These are the Delhi University, Banaras Hindu University, the North Eastern Hill University, South-Gujarat University, Poona University, Kerala University and the Panjab University.

Women's studies is the pursuit of a more comprehensive critical and balanced understanding of social reality. Its essential components include women's contribution to social processes, women's perception of their own lives, the broader social reality and their struggles and aspirations, roots and structures of inequality that lead to marginalisation, exclusion of women from the scope, approaches and conceptual framework of most intellectual enquiry.

The University Grants Commission (UGC) which has selected the Universities has also drawn up guidelines for the development of women's studies it will provide a minimum of Rs. 25,000 to the colleges for promoting these studies. The Ford Foundation is also reported to have offered 1,00,000 U.S. Dollars (approximately Rs. 1.3 million) for the purpose.

In view of the need to have material in the regional language for promoting such studies, the Banaras Hindu University has been asked to produce suitable material in Hindi. Later, such material would be prepared in other languages like Gujarati, Malayalam, Tamil and Telugu.

As intensive training of the University college teachers is crucial for expansion of this programme, the SNDT Women's University, Bombay was asked by the UGC to prepare a manual. A comprehensive textbook for undergradutes has been drafted by the research unit on women's studies of the SNDT which has been sent to UNESCO.

The selected universities have been asked to undertake the preparation of status reports on the level of awareness on women's issues, concerns and studies in the area under their jurisdiction and to identify the study of the debate on women's problems by compiling articles from journals, newspapers and other literature from their regions.

Besides, workshops and summer institutes for promotion of women's studies would be organised at the regional level in different parts of the country.

Universities would also begin their exercise of revising their post-graduate curricula for incorporating women's studies in different disciplines. A review of existing textbooks would also be undertaken to eliminate sexist bias.

The UGC Standing Committee on Women's Studies will scrutinise, review and monitor the working of the programme which has been recognised as a critical input and support for several other policy thrusts that are already being promoted by the UGC such as promoting of human rights, population education, adult education, science for the people and the like.

The main objective for incorporating women's studies in the humanities and social sciences was to counter the reactionary forces emanating from certain sections of the media, economic, social and political institutions that encourage the demotion of women from productive to mere reproductive roles. It would help revitalise university education, bringing it closer to 'burning' social issues and to help fulfil a special responsibility to produce for all levels of the educational system, teachers who are aware of the need for a non-sexist education and who would actively promote social equality.

The strategy for the rest of the Seventh Plan period would be to develop at least ten resource centres all over the country with at least one such Centre per region for teacher development, curricula development and for preparation of teaching-learning materials including translation.

National Conference on Aerodynamics

The Indian Institute of Technology, Bombay has associated itself with India's light combat aircraft (LCA) programme. This was revealed by Dr. B. Nag, Director of the Institute while presiding over the third national conference on aerodynamics. Dr. Nag said that the country's aeronautical industry, which had made limited progress, was poised for a major thrust and the LCA was part of the growth. He said that several other institutions in the country too were involved with this prestigious project.

He said the IIT was keen on interacting with various agencies. It has strong ties with organisations based in Bangalore like the Aeronautical Development Agency (ADA), entrusted with the design and development of the LCA, and the Aeronautical Development Establishment (ADE).

Prof. S.M. Deshpande, Professor of Aerospace Engineering at the Indian Institute of Science, Bangalore, who spoke on "The Role of Computational Fluid Dynamics (CFD) on the Design of Aerospace Vehicles", said that CFD would be useful for supersonic flow calculations for the LCA. It was also useful for the scramjet which was being planned by the defence research development organisation.

Professor P.B. Desai, aeronautical engineering department, IIT, Bombay, said that a successful aircraft derived its qualities from a sound design. In this, he said, an aerodynamist could play a useful part. He added that an aircraft design was very much a fluid one and, therefore, it was not possible to predict its outcome.

The conference was jointly organised by the IIT and the Bombay branch of the Aeronautical Society.

Anna Varsity Award for Research in Engineering and Technology

The Syndicate of Anna University in its forty-third meeting has approved the creation of an endowment under the title 'Anna University Award for Research in Engineering/Technology' to be awarded to the outstanding Engineers/Technologists of the Nation and that a sum of Rs. 2.00 lakhs be gifted to the UGC for instituting the above award from the R & D fund of the University. From 1988 onwards an award of the value of Rs. 15,000 will be given every year for outstanding research in Engineering and Technology.

Cancer Detection Centres

Centres for early cancer detection with the facility of cytology have been set up in 52 medical colleges of the country and all the remaining medical colleges will have such centres during the Seventh Plan.

Besides the Government has given 50% grant for installation of cobalt units to 81 institutions during the Seventh Plan. Eventually all medical college hospitals in the country will be covered with cobalt therapy facilities. In addition, all the district headquarter hospitals would provide papsmear facility for early detection of cancer.

The primary focus of the National Cancer Programme launched during the Seventh Plan with an outlay of Rs. 20 crores is to try for prevention of cancer and to detect it as early as possible. If detected and effectively treated earlier, the life of the cancer patients could be prolonged.

Rs. 100 Crore for R & D Centres

The University Grants Commission (UGC) has allocated Rs. 100 crore during the current plan period for setting R and D centres and modern research laboratories in various universities. This was revealed by Prof Satchidananda Murty while declaring open the Humanities block of the Bharathidasan University in Tiruchirapalli recently.

Open Varsity Study Centre

The Gorakhpur University has established a study centre of the Indira Gandhi National Open University to bring higher education to the doorsteps of those aspiring to improve their educational qualifications. Besides housewives, people living in remote rural areas, people belonging to backward sections and those who have a desire to learn while earning their livelihood would also be benefited. The study centre will start functioning from July 1988.

New Diploma Courses

The Dakshina Bharat Hindi Prachar Sabha an Institution of National Importance, has decided to introduce Diploma Courses in Library Science and Journalism in Hindi medium. The courses are expected to be started from January, 1988.

News from Agril. Varsities

Remote Sensing Centre

The Haryana State Remote Sensing Application Centre, the first of its kind in the State, has been established at Haryana Agricultural University (HAU) campus. The centre will cost about Rs. 1.5 crores and would function under the administrative control of Haryana State Science and Technology Department. The centre is being developed on 5 acres of land given by the HAU.

This centre will use and utilise the latest remote sensing techniques for application in various fields like agriculture, soils, land use, forestry, ecology, water resources, mineral and geographical exploitation etc. as remote sensing is a powerful tool in collecting and compiling reliable and timely data about various natural resources.

Shri Mahender Singh, Vice-Chancellor, HAU said that remote sensing, which is the science of collecting information about distant objects without coming into contact with them, will be of immense use to HAU scientists. By the remote sensing techniques using interactive computers, HAU scientists and other state agencies will be able to measure accurately important characteristics in areas like crop production, land use, crop diseases, urban and used water resources, soil mapping etc. These techniques will also be helpful in studying problems of waterlogging, salinity and food damage.

Besides, camera and other energy-measuring instruments would be used at this lab. With the installation of a computer, interactive image analysis system, the centre would be in a better position to use more efficiently the remotely sensed data obtained from the Indian Remote Sensing Satellite (IRS), Landsat and the French Satellite.

Medicinal & Aromatic Plants Project

An All India Co-ordinated Research Project on Medicinal and Aromatic Plants has been sanctioned for implementation by the Kerala Agricultural University (KAU) during the Seventh Five Year Plan period with the financial assistance of the ICAR. The project envisages extensive studies on crop improvement and crop management aspects of lemongrass, palmarosa and medicinal plants of commercial importance.

The project to be located at the College of Horticulture, Vellanikkara will be for a period of three years from 1987 with a financial outlay of Rs. 7 lakhs. The ICAR will meet 75 per cent of the project cost.

The objective of the project is to carry out studies on the genetic improvement of lemongrass, vetiver and palmarosa and post-harvest of the oils with an objective to maintain long-term quality under storage. The project will also undertake exploration of medicinal and aromatic plants in Palghat District and document their uses and undertake chemical evaluation.

Refresher Course for Field Staff

Dr. Khem Singh Gill, Director of Extension Education of the Punjab Agricultural University (PAU) inaugurated a three-day Refresher Training Course for the Agronomy Field Extension Staff. First of its kind held at the PAU, this course has been designed to prepare the nucleus extension staff for transfer of technology to the personnel of the State Department of Agriculture and the farmers of the State under the newly envisaged Training and Visit (T & V) scheme. Twenty specialists from all the districts of the State attended the course. They were imparted training on the latest advances in the field of crop, water and weed management; crop nutrition; plant protection and use of farm machinery and diversification of cropping pattern.

Dr. R.S. Narang, Professor and Head of the Department of Agronomy of the PAU pleaded for setting up of water management extension service in the State to create an awareness about efficient water management among the farmers.

Dr. Jaspinder Singh Kolar, Professor of Agronomy (Extension) of the PAU and Joint Co-ordinator of the training programme assured that besides this many more programmes would be arranged to continue the efforts and keep the field extension staff in tune with the times and abreast with the latest advances in the field.

Sports News

Varsities Tennis Team

M. Balachandran of Anna University, Madras, who represented Indian Universities Tennis Team during its participation in the World University Games held at Zagreb (Yugoslavia), has been named Captain of the Tennis Team for participation in the National Tennis Championship, commencing at Calcutta from December 28 onwards. The team was selected after the trials held at BHU, Varanasi on Dec. 18-19, 1987. The other members of the team are; R.P. Reddy (Osmania University), K. Shankar (Kerala Univ.) and Amir Alvi (Aligarh Muslim Univ.)

Prior to participation in the National Championship, the team was trained at Varanasi under the supervision of Mr. D.R. Adhirana, Tennis Coach from Banaras Hindu University.

GNDU Claim Women Cricket Title

GND University won the Inter University women cricket championship for the year 1987-88 concluded at Amritsar on Dec. 8, 1987 defeating Ranchi University in the finals.

Meenakshi Chopra, the medium pace bowler of GNDU, by her superb performance placed the host university on top.

Scores

G.N.D.U.	131 & 87
Ranchi University	32 & 92

News from Abroad

Protocols on Education

Two Indo-Soviet protocols on equivalence of degrees and diplomas, cooperation in higher education and training have recently been signed in Delhi. The first protocol signed at Government-to-Government level, provides for recognition by accredited universities and other educational and scientific organizations and institutions by each country of the equivalence of certificates, degrees and diplomas awarded by the institutions of the other. It also provides for recognition of the equivalence of certificates at the school level in the general and vocational streams. The certificate holders are eligible for joining higher educational establishments in both countries.

The protocol comes into force with immediate effect and is valid for five years unless terminated by either side.

The second protocol is on cooperation in the sphere of higher education and training of students and highly qualified specialists for the year 1987-88. Under the protocol both sides will assist higher educational institutions in exchange of students at graduate and post-graduate levels and teachers, scientists and other specialists for scientific pedagogical studies and advanced training programmes.

Joint collaborative programmes in the area of high temperature semi-conductivity will be launched between the Moscow State University and Indian Universities which are being identified. Agreement on the programmes in the high tech areas follows the visit of the University Grants Commission (UGC) led by its Chairman, Prof Yash Pal to USSR in September, 1985 and discussions he had with the Soviet side in June, 1987. Article 7 of the protocol specifies that cooperation in these areas will not preclude cooperation in additional areas which may be agreed upon mutually.

Universities and technological institutions in USSR and the five Indian Institutes of Technology (IIT's) and other technological institutions and universities will collaborate on modernisation in science and technology as well as on problems of mutual interests.

Under the protocol, the Soviet side will send in 1987-88 up to 40 students, post-graduates and teachers for training at Indian institutions for higher education in Indian languages, History, Economics, Geography and Arts including the performing arts and about 50 during 1988-89. The scholarships will be for an academic session of 10 months.

The protocol provides that it may be extended for another two years, till 1989-90, by mutual agreement.

Salvi Takes Over as AIU President

Dr. P. V. Salvi, Vice-Chancellor, Marathwada Krishi Vidyapeeth, Parbhani, assumed office of the President of the Association of Indian Universities for one year effective 24th December, 1987. Dr. Salvi was elected President at the 62nd Annual Meeting of the Association held at Osmania University, Hyderabad on 16-17 December, 1987.

Born on 1st June, 1931 at Phansop Village of Ratnagiri District in Maharashtra, Dr. Pratap Vithal Salvi had his higher education at Cornell University, USA. An expert in Agricultural Extension and Rural Sociology, Dr. Salvi was Vice-Chancellor of the Konkan Krishi Vidyapeeth, Dapoli for 10 years from 1977-87. Prior to assuming reins of university administration, Dr. Salvi was an Assistant Professor of Social Sciences, College of Agriculture, Pune 1958-63; Prof. of Agricultural Extension 1963-71; Associate Dean, College of Agriculture, Dapoli 1971-75; and Dean, Faculty of Agriculture, Konkan Krishi Vidyapeeth, Dapoli 1975-77. Dr. Salvi is a founder member of the Indian Society of Extension Education. Highly respected in professional circles, Dr. Salvi brings to his new office a wealth of varied experience in both teaching and administration. We welcome Dr. Salvi's election and wish him a highly purposeful term as President of the Association of Indian Universities.

Dr. P.V. Salvi

AIU News

Osmania University Hosts 62nd Annual Meeting

Osmania University, Hyderabad were the hosts to the 62nd Annual Meeting of the Association of Indian Universities held on 16-17 December, 1987. Hon'ble Shri N. T. Rama Rao, Chief Minister, Andhra Pradesh, inaugurated the Meeting. Prof. G. Ram Reddy, Vice-Chancellor, Indira Gandhi National Open University presided. In his Inaugural Address Shri Rama Rao said that the commitment of Union Government towards the implementation of National Education Policy (NEP) should be substantial and purposeful as it involved heavy expenditure. He hoped setting up of regional centres of University Grants Commission (UGC) would held States share financial burden in the implementation of NEP. The Andhra Pradesh Government was earmarking Rs. 700 to 800 crores on education every year, 1/5 of which was spent on higher education. This was indeed the highest expenditure by any State. Detailing the various steps like establishment of University of Health Sciences, Telugu University and a separate university for women, the Chief Minister announced that Andhra Pradesh Government was contemplating to set up a rural university "to fulfil the hopes of Gandhiji as the development of country lies in the uplift of rural people". He said that it was also being contemplated to set up an institute for professional studies with emphasis on engineering, medicine and management.

Prof. G. Ram Reddy in his Presidential Address made out a strong case for enhanced financial assistance to the universities by the Central and State Governments and the UGC. He even suggested constituting a University Finance Commission once every five years. The text of Prof. Ram Reddy's Presidential Address is being carried elsewhere in this issue. Earlier Prof. T. Navaneeth Rao, Vice-Chancellor, Osmania University welcomed over 100 Vice-Chancellors gathered for the Meeting. The major points that emerged at the deliberations of the Meeting are as follows :

(1) Frequent interferences in the functioning of universities by the Centre and State Governments has greatly impinged upon the academic, administrative and financial autonomy of universities. The Governments should, therefore, restrain themselves from interfering in the functioning of the Universities.

(2) Most of the universities are suffering from paucity of resources. As a result, inadequacy of infrastructure facilities for teaching and research adversely affect the quality of higher education. It is therefore, desirable that the UGC should provide development grants on 100 per cent basis and State Governments should release reasonable amount of funds for meeting maintenance expenditure.

(3) In order to improve communication network in universities, the UGC should expedite the release funds on liberal basis t the universities for suc modern communicatio facilities as telex, Compute hook-up, wireless an internal TV circuits etc.

(4) The services rendered by the universities should be extended to the people of the area where they are situated. In this connection, University-Community interaction should be promoted and strengthened in order to enhance the contributions of universities to the society.

(5) In pursuance with the constitutional objective of bringing about parity between the two sexes, the universities should develop suitable curriculum so as to achieve the laudable objective of Women's equality in our society.

(6) The youth of our country take part in adventure activities, participate in camps, exchange programmes and social services so as to develop a comprehensive and integrated personality. It was, therefore, suggested that NCC should be an optional subject in the university curriculum.

(7) With a view to promoting higher education and research, the links between universities and research councils like ICSSR and CSIR should be strengthened.

(8) In pursuance with the resolution of the World Health Organisation for achieving the objective of Health for All by 2000 AD, the universities should introduce Diploma/Degree Courses in Health Sciences.

(9) Service conditions of Vice-Chancellors and other University Administrators should be rationalised and their salaries and other allowances should be determined in commensurate with their qualifications and experience as well as responsibilities entrusted to them.

10. The linkages between secondary and university education ought to be established through the development of suitable curriculum and evaluation system so that mobility of students especially those pursuing vocational streams of education could be ensured.

The Meeting unanimously elected Dr. P. V. Salvi, Vice-Chancellor, Marathwada Krishi Vidyapeeth, Parbhani, as President of the Association of Indian Universities for one year term. Prof. S.K. Agrawala, Vice-Chancellor, Agra University was appointed Secretary of the Association for a five year term.

A Book-Exhibition was also organised on the occasion by the Association of Indian Universities in university library building. The Exhibition was opened by Justice Dr. P. Jagan Mohan Reddy, a Former Vice-Chancellor of Osmania University.

The 63rd annual meeting of the Association will be held at Varanasi.

West Zone Youth Festival at Bombay

University of Bombay hosted the four-day West Zone Inter-University Youth Festival from 4 to 7 December, 1987. 666 delegates from 25 West Zone Universities participated. Dr. Ramesh Prabhu, Mayor of Bombay inaugurated the Youth Festival by lighting the traditional lamp on December 4, 1987 in the Convocation Hall of the University of Bombay. Each university delegation led by a girl dressed in traditional Indian costume presented its university flag to the Chief Guest who handed it over to the NCC volunteers who in turn arranged them along the circumference of the semi-circle on the dias. The Vice-Chancellor Dr. (Miss) M.D. Bengalee in her address extended a warm welcome to the participants and administered the pledge printed on the Welcome Card.

Orientation session was held after the inaugural function in which contingent incharge of participating universities were briefed about the rules and regulations of different cultural activities. Lots were drawn and items of participation in cultural events of Music, Dance, Theatre, Literary activity and Fine Arts were finalized.

The Indian Group Songs were held at the K.C. College Auditorium on Dec. 5, 1987. The participants from twenty four universities presented a Folk Song and a Song on the theme of National Integration. The best rendition came from the participants of the SNDT Women's University who were declared the best.

The University Club House Auditorium, the venue of the Classical Instrumental (Non-Percussion) Music, came alive to the sound of music. Twelve universities presented their meticulously rehearsed musical items. The overall standard of presentation was very high and a few items which stood out were the sitar recital by the Indira Kala Sangeet Vishwavidyalaya, Khairagarh and Banasthali Vidyapeeth, Flute recital by Bombay University, and the Santoor recital by Jodhpur University.

The One Act Plays were enacted at the Sydenham College Auditorium. The curtain raiser was 'Bhekari-Shakti' presented by Rajasthan Vidyapeeth. This symbolic play that depicted youth in search of solutions to the problems in the post independent India emphasised the need for rational thinking and traced the root cause of unrest in youth to the ego of man. The presentation of the Mohanlal Sukhadia University comprised two parallel strong lines—one that of the Zamindar and the oppressed villager and the other of the hunter after his prey.

The Marathwada University presented a Marathi play 'Ani Maza Deshpande Zala' dramatizing the steep decline in values and all-embracing decadance in the domain of academics. Students of Amravati University presented the play "Harnam Singh Ka Dhaba". The play was based on the riots which took place after the assassination of Mrs. Indira Gandhi. The play revolved ronud Hanam Singh who became a victim of riots, with the other characters sympathising with him.

The participants of Shivaji University impressed the audience with their fascinating performance which won them the first prize. The Marathi play "Andharachi Bhiti" (Fear of the Dark) was a political satire that held the spectators spell bound with its near perfect delivery of dialogues coupled with a unique and impressive make up.

National Integration was the topic for 'On the Spot Painting'. The participants put down their ideas with the help of pencil, ink stippling and poster colours. Drawings by Saurashtra University, Nagpur University, and Jodhpur University were highly impressive.

Classical Dances were presented at the Club House Auditorium in which eleven universities participated'. Young exhuberant dancers presented flawless 'Bharatnatyam' and 'Kathak'. The only male participant in a field dominated completely by females came from Nagpur University. The Kathak dancers of Bhopal University and Rajasthan University, Jaipur were adjudged the best.

The valedictory function was held at the Sports Pavillion. The acting Maharashtra Governor, Chief Justice Mr. Chittatosh Mookerjee, who is also the Chancellor of Bombay University, called upon the participants to carry the torch of national integration wherever they went. Present during this occasion was also a group of hundred Soviet Youth who are on a visit to India as a part of the Festival of the USSR in India.

Film stars Raj Kapoor and Sunil Dutt, M.P. also graced the occasion. Raj Kapoor was warmly welcomed by the leader of the Russian contingent and presented with a cap and sash amidst lusty cheering from the Soviet Youth. The Soviet Youth and university contingents later presented cultural items to the delight of the spectators. Soviet participants were presented silver medals as mementoes. The grand finale of the Youth Festival came with a bewitching firework.

West Zone Inter-Varsity Youth Festival
1987-88
RESULTS

Event	Name of the Winniug University
1. Music	
(a) Classical Vocal Solo (Hindustani or Karnatic)	S.N.D.T. University (Bombay) & Nagpur University (Nagpur)
(b) Classical Instrumental Solo Percussion	University of Bombay (Bombay) & Amravati University (Amravati)
(c) Classical Instrumental Non-percussion.	University of Bombay (Bombay) & Jodhpur University (Jodhpur)
(d) Light Vocal (Indian)	S.N.D.T. University (Bombay) & Amravati University (Amravati)
(e) Western Vocal (Solo)	Tata Institute of Social Sciences (Bombay) & Goa University (Goa)
(f) Group Song (Indian)	S.N.D.T. University (Bombay) & Bhopal University (Bhopal)
(g) Group Song (Western)	Goa University (Goa) & Tata Institute of Social Sciences (Bombay)
2. Dance	
(a) Folk Dance	University of Rajasthan (Jaipur) & Indira Kala Sangit Vishwavidyalaya (Khairagarh)
(b) Classical Dance	Bhopal University (Bhopal) & University of Rajasthan (Jaipur)
3. Literary Event	
Quiz	Nagpur University (Nagpur) & Bhopal University (Bhopal)
4. Theatre	
(a) One-act-play	Shivaji University (Kolhapur) & Jodhpur University (Jodhpur)
(b) Skit	Amravati University (Amaravati) & Marathwada University (Aurangabad)
(c) Mime	Nagpur University (Nagpur) & Rani Durgavati Vishwavidyalaya (Jabalpur)
5. Fine Arts	
(a) On the Spot Painting	Mohanlal Sukhadia University (Udaipur) & Amravati University (Amravati)
(b) Collage	Rajasthan Vidyapeeth (Udaipur) & Bombay University (Bombay)
(c) Poster Making	Marathwada University (Aurangabad) & Rajasthan Agricultural University (Bikaner)
(d) Clay Modelling	Amravati University (Amravati) & Tata Institute of Social Sciences (Bombay)
(e) Cartooning	Amravati University (Amravati) & Marathwada University (Aurangabad)
All Round Winner	S.N.D.T. Women's University Bombay
All Round Runner Up	Amravati University (Amravati)

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

CURRENT DOCUMENTATION IN EDUCATION

A List of select articles culled from periodicals received in the AIU Library during December, 1987

EDUCATIONAL SOCIOLOGY

Sharma, M.L. Students and the problem of national integration. *Gandhi Marg* 9 (5), 1987, 300-306.

Sheth, D.L. Reservations policy revisited. *Eco & Pol Weekly* 22 (46), 1987, 1957-62.

Ujagar Singh. Relevance of university education to national aspirations. *J Hr Edn (Delhi)*, 12 (1-3), 1987, 151-9.

EDUCATIONAL PLANNING

Pillai, J.K. Education yet to achieve the desired goals/ *Yojana* 31 (19), 1987, 11-15, 39.

Rokadiya, B.C. Education for all : Towards achieving the right to learn. *Edn Q* 39 (2), 1987, 10-13.

Sreekumar, S.S. Programme planning in higher education in Kerala, 1969-70 to 1977-79. *Ind Dissertation Abstracts* 15 (4), 1986, 466-69.

EDUCATIONAL ADMINISTRATION

Natarajan, R. Management of student activities in higher education. *J Hr Edn* (Delhi), 12 (1-3), 1987, 57-68.

CURRICULUM

Joseph, A. Towards implementing the project work at the under-graduate level. *J Hr Edn* (Delhi) 12 (1-3), 1987, 169-74.

TEACHERS & TEACHING

Bharadwaj, Krishna. Unrest in higher education : The broader issues. *Eco Pol Weekly* 22 (42 & 43), 1987, 1801-4.

Bhattacharjee, S. Effects of projects on teaching in educational institutions. *J Hr Edn* (Delhi) 12 (1-3), 1987, 174-77.

Chilana, M.R. In-service education and training of teachers : Twentyone steps for overhauling. *Prog Edn* 62 (2), 1987, 37-42.

Patnaik, B.N. Medium of technical education in India. *J Hr Edn* (Delhi) 12 (1-3), 1987, 51-6.

Sarkar, Tanika and others. Teachers' strike : The DUTA experience. *Eco Pol Weekly* 22 (42 & 43), 1987, 1791.

Wilson, Robert C. Towards excellence in teaching. *New Directions Teaching Learning* (31), 1987, 9-24.

EDUCATIONAL RESEARCH

EDUCATIONAL DATA system redesign. *International J Ednl Res* 11 (4), 1987, 391-513.

Sood, J.K. Needed research in teacher education for relevance and excellence. *Edn Q* 39 (2), 1987, 22-5.

Yadav, M.S. and others. Research policy in the perspective of national development. *J Hr Edn (Delhi)*, 12 (1-3), 1987, 29-49.

EDUCATIONAL TECHNOLOGY

Fernandes, Marjorie. Constraints on the use of educational technology in Indian higher education. *J Hr Edn* (Delhi), 12 (1-3), 1987, 177-80.

Gellman-Buzin, Barbara. Telecommunications as an element of competitive strategy. *New Directions Cont Edn* (35), 1987, 71-84.

EVALUATION

Aleamoni, Lawrence M. Some practical approaches for faculty and administrators. *New Directions Teaching & Learning* (31), 1987, 75-8.

Aleamoni, Lawrence M. Typical faculty concerns about student evaluation of teaching. *New Directions Teaching & Learning* (31), 1987, 25-31.

Arreola, Raoul A. A faculty evaluation model for community and junior colleges. *New Directions Teaching & Learning* (31), 1987, 65-74.

Arreola, Raoul A. The role of student government in faculty evaluation. *New Directions Teaching & Learning* (31), 1987, 39-46.

Centra, John A. Formative and summative evaluation: Parody or paradox? *New Directions Teaching & Learning* (31), 1987, 47-56.

Gil, Doron H. Instructional evaluation as a feedback process. *New Directions Teaching & Learning* (31), 1987, 57-64.

McKeachie, W.J. Can evaluating instruction improve teaching ? *New Directions Teaching & Learning* (31), 1987, 3-8.

Stevens, Joseph J. Using student ratings to improve instruction. *New Directions Teaching & Learning* (31), 1987, 33-8.

Subbanarayan, P. A study of the relationship between teacher effectiveness, research and publication and self-concept. *Ind Dissertation Abstracts* 15 (4), 1986, 458-60.

ECONOMICS OF EDUCATION

Behrman, Jere R. Schooling and other human capital investments : Can the effects be identified ? *Eco Edn Rev* 6 (3), 1987, 301-5.

Blum, Albert A. Countertrading textiles for tuitio A way to secure more foreign students. *Eco Edn Rev* 6 (3 1987, 307-9.

Heath, Julia A and Tuckman, Howard P. The effects o tuition level and financial aid on the demand for undergra duate and advanced terminal degrees. *Eco Edn Review* 6 (3) 1987, 227-38.

Knight, J.B. and Sabot, R.H. The rate of return on edu cational expansion. *Eco Edn Rev* 6 (3), 1987, 255-62.

Tsang, Mun Chiu. The impact of underutilization o education on productivity : A case study of the U.S. Bel companies. *Eco Edn Rev* 6 (3), 1987, 239-54.

SCIENCE EDUCATION

Jain, H.C. The social location of knowledge. *J Hr Edn* (Delhi) 12 (1-3), 1987, 19-27.

VOCATIONAL EDUCATION

Azzaretto, John F. Competitive strategy in continuing professional education. *New Directions Cont Edn* (35), 1987, 45-58.

ADULT EDUCATION

Rajput, J.S. Complementarity of formal and non-formal systems of education. *Edn Q* 39 (2), 1987, 14-8.

ROUND TABLE on role of adult education in the promotion of national integration. *Indian J Adult Edn*, 48 (3), 1987, 5-74.

DISTANCE EDUCATION

Baden, Clifford. Competitive strategy in continuing education. *New Directions Cont Edn* (35), 1987, 5-18.

Khullar, K.K. New education policy and open university. *Edn Q* 39 (2), 1987, 7-9.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Kuldip Kaur. Literacy in Punjab : An interpretative study. *Prog Edn* 62 (2), 1987, 43-6.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Anthropology

1. Das, Hiralal. *Age changes in some somatometric characters of the Hajongs of Meghalaya.* Gauhati. Dr. (Mrs) P.B. Das.

Microbiology

1. Srirama Raju, K. *Symbiotic efficiency and growth of pigeonpea, Cajanus cajan (L.) Millsp in relation to nitrogen, cobalt and molybdenum nutrition.* Osmania.

Biochemistry

1. Anjana Kumari. *Biochemical and immunological studies on Pasteurella multocida.* PAU.
2. Asha Kiran. *Isolation and characterization of membrane proteins and lipids from lymphoid cells.* PAU.
3. Ghosh, Subrata Kumar. *Studies on the isolation and characterization of enzyms involved in the biosynthesis of mycobacillin by Bacillus subtilis B3.* Calcutta.
4. Mallikarjuna Rao, U. *Redox reactions of nicotinamide coenzymes in aqueous micellar systems as models for enzymatic hydride/electron transfer.* Osmania.
5. Mukhopadhyay, Sucheta. *Study on some aspects of the enzymology of UDP glucose-4-epimerase from Saccharomyces fragilis.* Calcutta.
6. Nayyar Rabbani. *Study of placental calcium activated neutral protease (CANP), its endogenous inhibitor and the role of CANP in muscular dystrophies.* Osmania.
7. Shailaja K. *Studies on follicular maturation and luteinization.* Nagpur. Dr. G. Lakshmi Kumari.
8. Subedar Singh. *Biochemical studies on ischaemic heart disease.* BHU. Dr. G.R.K. Rao.

Botany

1. Adhao, A.A. *Plant fossils from the Deccan intertrappean localities of Central India.* Nagpur. Dr. M.R. Yawale.
2. Annie, P.T. *Genetic studies in rice, Oryza sativa Linn.* Calicut. Dr. K. Pavithran.

3. Bairiganjan, Gaur Chandra. *Cytotaxonomic survey of fabaceous plants in Orissa*. Utkal.

4. Chitralekha, P. *LM and TEM studies during cellularization of embryo sac and endosperm in Ranunculus sceleratus Linn.* Delhi.

5. Ghosh, Rama. *The nuclear matrix network in onion cells.* Calcutta.

6. Girish Kumar. *Studies on some aspects of the cytogenetics of Solanum.* BHU. Dr. S.K. Roy.

7. Joseph, Joy P. *Micromorphological studies in guayule (rubber)—Parthenium argentatum Gray.* Patel. Dr. J.J. Shah and Prof. J.A. Inamdar.

8. Joshi, Sadhna. *Studies on the fungal diseases of grains of pearl millet, Pennisetum typhoides (Burm F.) Stapf and Hubb. under storage conditions in some districts of Rajasthan.* Rajasthan. Dr. D. Williamson.

9. Kothari Nirmala, N. *Morpho-histochemical aspects of knot in wood.* Patel. Dr. J.D. Patel.

10. Krishna Rao, N. *Studies on dematiaceous hyphomycetes colonizing litter.* Osmania.

11. Kshatriya, Lalita. *Study of water pollution and irrigational use of polluted water in Ratlam area.* Vikram. Dr. P.S. Dubey.

12. Lal, Shailendra Kumar. *Biodegradation of cellulose by some soil fungi.* Durgawati. Dr. S.K. Dhamija.

13. Megharaj, M. *Effects of some insecticides and phenolics on soil algae.* Nagarjuna.

14. Misra, Baradakanta. *Studies on some physiological and biochemical aspects of organogenesis in plant tissue culture in vitro.* Utkal.

15. Pal, Tapas Kumar. *Taxonomic studies of the family Malvaceae of India,* Culcutta.

16. Purohit, Kshetramohan. *Ravisionary studies on certain genera of the family Rosaceae in India.* Calcutta.

17. Ramesh Kumar, D. *Comparative taxonomical studies on microfungi from deciduous (Nirmal-Andhra Pradesh) and evergreen (Agumbe-Karnataka) forests.* Osmania.

18. Ray, Syamalkumar. *Some pharmacognostic aspects of Andrographis paniculata.* Calcutta.

19. Shrivastava, Anup. *Forage production, nutritive value and carrying capacity of a grassland community in Bundelkhand region.* Bundelkhand. Dr U.N. Singh.

20. Shrivastava, Mukta. *Ecophysiology of seed germination and seedling growth.* HS Gour. Prof. G.P. Mishra.

21. Srivastava, Sushil Chandra. *A taxonomic study of genus Hedychium koen(Zingiberaceae) in India and its vicinity.* Calcutta.

22. Usha. *Role of some phenolic compounds on crop physiology factors influencing peanut productivity.* PAU.

Agriculture

1. Chowdhury, Ranjit Kumar. *Genetic studies of some quantitative characters in Ponicum maximum Jacq.* PAU.

2. Dinabandhoo, Chuni Lal. *Dissipation of some insecticides on cabbage and cauliflower.* YS Pamar. Dr. Amit Nath.

3. Chonkrokta, Gian Chand. *Effect of clean cultivation, mulching and sod culture on the yield and storage behaviour of red delicious apple.* YS Parmar. Dr. T.R. Chadha.

4. Karam Chand. *Breeding for Karnal bunt resistance through intermating of wheat cultivars with low coefficient of infection.* PAU.

5. Karan Singh. *The nature of soil K reserves as related to important pedogenic factors in Himachal Pradesh.* HP Krishi. Dr. R.S. Minhas.

6. Mankotia, Mahadev Singh. *Determination of rest period by Richardson Model and its physiological significance in bud break of apple, Malus domestica Borkh.* YS Parmar. Dr. K.K. Jindal.

7. Nagrale, Moreshwar Ramji. *Soil shrinkage relationship of vertisols.* Marathwada Agrl. Dr. S.B. Varade.

8. Pandey, Ravindra Kr. *Studies on effect of some pesticides on soil micro-organisms, nitrogen fixation, enzymatic activities and crop yield.* Birsa Agrl.

9. Peshen, Shyam Narayan. *Inheritance studies on some morphological and physiological traits in brinjal, Solanum melongena L.* YS Parmar. Dr. R.S. Rattan.

10. Prem Chand. *Effect of pre and post-harvest applications of growth retardants, nutrients and fungicides on fruit quality and storage behaviour of pear cv. China, Pyru$_3$ communis L.* YS Parmar. Dr. Jagmohan Singh.

11. Ram, Ram Badan. *Studies in the floral malformation of mango, Mangifera indica L.* BHU. Dr. B.P. Singh.

12. Ramesh Kumar. *Studies on buck eye rot of tomato.* HAU.

13. Ranote, Harpal Singh. *Studies on the clonal propagation of some prunus rootstocks and cultivars.* YS Parmar. Dr. T.R. Chadha.

14. Sharma, Ishwar Paul. *Influence of soil properties on erodibility and seasonal changes in soil water content under different eco-systems in some midhill regions of Himachal Pradesh.* HP Krishi. Dr. C.L. Acharya.

15. Sharma, Yash Pal. *Response of peach trees to nitrogen and weed management practices.* YS Parmar. Dr. V.P. Bhutani.

16. Sharma, Yoginder Dutt. *Variability and inheritance studies in sweet pea, Lathyrus odoratus Linn.* YS Parmar. Dr. A.P.S. Gill.

17. Shekhar, Gangadhariah Soma. *Response of NPK doses on growth, flowering, corm and cormel production in Gladiolus cv. Sylvia.* YS Parmar. Dr. J.S. Arora.

18. Singh, Bharat Prasad. *Growth and yield of rice and wheat grown in sequence under resource constraints.* Birsa Agrl.

19. Singh, Vijay Bihari. *Nutritional studies on radish, Raphanus sativus L.* BHU. Dr. A.N. Murya.

20. Surender Singh. *Studies on soft rot of potato, Solanum tuberosum L.* HAU.

Zoology

1. Adolph, Clement. *Studies on oribatid mites (Acari : Oribatei) of Malabar.* Calicut. Dr. M.A. Haq.

2. Chaudhuri, Dipti. *Effect of hormones on lipophysis in birds.* Calcutta.

3. Dixit, Anand Shanker. *Photoperiodicity in some femal birds.* BHU. Dr. P.D. Tewary.

4. Gandhi, Meena Ratilal. *Some aspects of fats and fatty acids in the termite, Odontotermes obesus (Termitidae: Isoptera).* Karnatak. Dr. S. Basalingappa.

5. Ghosh, Ajay Kumar. *Some important diseases of Indian major carps of West Bengal and their control measures with special reference to Argulus sp. infection.* Calcutta.

6. Jagan Mohan Rao, P. *Demographic and genetic studies on Gutta Koya Tribe of Andhra Pradesh.* Osmania.

7. Kaul, Sunil Chandra. *Studies on the cellular response towards heat shock and persistent hyperthermia in the ciliate, stylonychia mytilus Ehrenberg.* Delhi.

8. Krishnakumar R. *Studies on the spermatheca of some decapod crustaceans.* Calicut. Prof. K.G. Adiyodi.

9. Mishra, Ramkripal. *A study of phytotoxicity in wheat varieties and weed flora of Malwa tract by new chemical herbicides.* Devi Ahilya.

10. Raman, K. *Studies on the biology and ecology of some fresh water prawns in relation to pond culture.* Utkal.

11. Rajan, Roopa. *Host immune responses during M. Leprae infection and dapsone treatment.* Osmania.

12. Ranga, Anita. *Studies on the mechanism of action of gossypol acetic acid: A male antifertility agent.* Panjab.

13. Singh, Ram Autar. *purification, Kinetics and tissue distribution of arginase and glutaminesynthetase of the fish, Clarias batrachus L.* BHU. Dr. S.N. Singh.

14. Singhai, Sadhana. *Hydrobiological and ecological studies of newly made Tawa reservoir at Ranipur.* HS Gour. Dr. G.M.A. Ramani.

15. Srivastava, Govind Lal. *An experimental study on antimalarial activity of Casealpinia bondu bonducella against Plasmodium berghei in mice with special reference to chloroquine-resistant parasite.* BHU. Prof. S.N. Tripathi.

16. Suresh P.K. *Adrenal control of seasonal reproduction in the migratory bird red headed bunting, Emberiza bruniceps.* BHU. Dr. (Mrs) C.M. Chaturvedi.

17. Susheela G. *Study on the population dynamics of the helminth parasites of rats of Hyderabad and its surroundings.* Osmania.

18. Tripathi, Parmanand Mani. *Photoperiod and seasonal reproduction in a subtropical sparrow.* BHU. Dr. P.D. Tewary.

19. Vyas, Ashish. *Studies on the physiology of urination in multivoltine race of silk worm, Bombyx mori L.* Vikram. Dr. J P.N. Pathak.

20. Yadav, Naresh Kumar. *Utilization of domestic sewage and livestock wastes for carp fish culture.* HAU.

21. Yadava, Yugraj Singh. *Studies on the limnology an productivity of an Ox-bow lake in Dhubri District of Assam (India).* Gauhati. Dr. S.C. Dey.

Medical Sciences

1. Chhote Lal. *Study of lakshana on reproductive physiology,* BHU. Dr. K.C. Chunekar.

2. Das, Padma. *Modulation of experimental cervical carcinogenesis.* JNU. Prof. A. Ramesh Rao.

3. Goswami Asis. *Bioengineering/ergonomic evaluation o different types of mobility aids for lower extremity handicapped* Calcutta.

4. Misra, Usha Rani. *Management of doshika asrigdara in relation to prakriti.* BHU. Prof. (Km) P.V. Tiwari.

5. Saha, Dipali. *Lung function study of Calcutta people with special reference to industrial workers.* Calcutta.

6. Saxena, Renu. *Cytogenetic effects of some psychotropic drugs on human chromosomes.* Osmania.

7. Sharma, Krishna Kumar. *Concept of Anupana in ayurveda.* BHU. Prof. L.V. Guru.

8. Shimpi, Asha. *Study of mutagenic effects of recurrent and continued exposure to heat and heavy metals in industrial workers.* Delhi.

9. Tiwari, Ashutosh. *Manas prakriti ka ek vaigyanik adhyayan (Hindi).* BHU.

10. Tripathi, Shailendra Kumar. *Management of problem of rural health through ayurveda.* BHU. Prof. K.N. Udupa.

Animal Husbandry

1. Madan Mohan. *Intensive studies on the nutritive value of Mahua, Madhuca indica cake for chicks.* J.N. Krishi.

2. Singh, Birendra Kumar. *Studies on some aspects of reproduction in different breeds of pigs and relationship between reproductive performance and blood biochemical profiles.* Birsa Agrl.

INDIAN INSTITUTES OF TECHNOLOGY

BOMBAY-DELHI-KANPUR-KHARAGPUR-MADRAS &
INSTITUTE OF TECHNOLOGY, BHU, VARANASI

A Joint Entrance Examination (JEE) will be held in India at various centres on **May 4 & 5, 1988** for admission to Bachelor's Degree Courses in Engineering, Architecture and Pharmacy besides Integrated Master's Degree Courses in Sciences and Mathematics.

All Indian Nationals, whether in India or Abroad, must appear at JEE comprising a three hour paper in each of Mathematics, Physics and Chemistry.

Only those candidates who passed or pass the 10+2 examination by July 15, 1988 are eligible to apply. The date of birth should be on or later than October 1, 1967. For scheduled caste/tribe candidates 15%/7.5% seats are reserved. A few seats, by direct admission, are reserved for Foreign Nationals.

The Application Forms and Information Brochure may be had by sending a crossed Indian Postal Order/Bank Draft for Rs. 20/-. The last date for issue of forms by post is January 19, 1988 and in person by January 29, 1988. The last date for receipt of forms is February 4, 1988. The address for communications is :

Chairman, Undergraduate Admission Committee,
Indian Institute of Technology,
KANPUR-208 016

CLASSIFIED ADVERTISEMENTS

OFFICE OF THE REGISTRAR : GAUHATI UNIVERSITY

GAUHATI-14

ESTABLISHMENT BRANCH

Advertisement No. 11 of 1987

Applications in the Standard Forms prescribed below are invited from eligible candidates and will be received upto **18-1-1988** for the following posts :

(A) 6th Plan Posts

(1)	Reader in Psychology Specialisation	— One post — Guidance & Councelling
(2)	Reader in Journalism Specialisation	— One post — Open
(3)	Reader in Library & Information Science Specialisation	— — One post — Open
(4)	Professor of Law Specialisation	— One post — Open
(5)	Mechanical Engineer	— One post for USIC Deptt.

(B) Permanent Posts

(6)	Lecturer in Commerce Specialisation	— One post — M. Com with Degree in Law. Candidate having experience in handling and exhibiting industrial raw materials and finished products desirable / M.Com. with management group.
(7)	Lecturer in Commerce Specialisation	— One post — M.Com. with Financial Management Group with Hons. in Banking at the Degee level.
(8)	Professor of Botany Specialisation	— One post — Open
(9)	Reader in Botany Specialisation	— One post Plant Physiology or Mycology and Plant Pathology or Phycology.
(10)	Reader in Chemistry Specialisation	— One post — Physical/or Quantum Chemistry
(11)	Lecturer in French Specialisation	— One post — French
(12)	Lecturer in Education Specialisation	— One post — Open
(13)	Reader in Education Specialisation	— One post — Experiencc in conducting psychological laboratory work at the post-graduate level.
(14)	Reader in Education Specialisation	— One post — Educational Philosophy or Educational Sociology.
(15)	Reader in Folklore Specialisation	— One post — Folk Literature of Assam (including material in Tribal Languages)
(16)	Reader in History Specialisation	— One post — Open
(17)	Lecturer in History Specialisation	— One post — Ancient India
(18)	Reader in Assamese Specialisation	— One post — M.A. in Assamese Group-B, with specialisation either in Tibeto-Burman Language or in Pali-Prakrit and Comparative Grammar.
(19)	Lecturer in Assamese Qualification	— One post — M.A. in Assamese Group-A with Ph.D. Degree/Diploma Training in Composite Literature.
(20)	Reader in Physics Theoretical/Experimental Specialisation	— One post — Astrophysics/Solid State Physics/Nuclear Physics/Particle Physics preference to be given to candidates with post-graduate teaching experience. Subject specialisation must be supported by published work in the field.
(21)	Lecturer in Physics Theoretical/Experimental Specialisation	— One post — X-Ray Crystallography/Optics and Spectroscopy/Electronics. Subject Specialisation must be supported by published work in the field.

(22) Reader in Pol. Science — One post
Specialisation — Open

(23) Lecturer in Chemistry — One post
Specialisation — Physical Chemistry

(24) H.K. Barpujari Endowment Professor in Modern Indian History — One post

(25) Lecturer in Political Science — One post
Specialisation — Open

Scales of Pay

1. Professor : Rs. 1500-60-1800-100-2000-125/2-2500/-
2. Reader : Rs. 1200-50-1300-60-1900/-
3. Lecturer : Rs. 700-40-1100-50-1600/-
4. Mechanical Engineer : Rs. 1200-50-1300-60-1900/-

Essential Qualifications

Professor : An eminent scholar with published work of high quality actively engaged in research, Ten Years, experience of teaching and/or research. Experience of guiding research at Doctoral level.

Or

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Reader : Good Academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching meterials. About five years experience of teaching and/or research provided that atleast three of these years were as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding research work.

Lecturer : (a) : Doctorate degree or research work of an equally high standard, and (b) Good academic record with at least Second Class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University. Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subject.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualications prescribed in (b) above.

Provided further that if a candidate passessing a Doctorate degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctorate degree give evidence of research of high standard within eight yea of his appointment, failing which he will not be able to ea future increments until he fulfils these requirements.

Professor of Law : (a) Consistently good academic recor with First or high Second Class (B+) Master's Degree in La or any equivalent degree of a foreign University. (b) Exper ence of 10 years post-graduate or 15 years under graduat teaching. (c) Experience in guiding and promotioning researc

Preferential : A Doctorate degree in Law or published wor of an equally high standard.

Mechanical Engineer : At least Second Class M.E. o M.Tech. Degree in Mechanical Engineering (or equivalen degree) with five years experience in R & D of Instruments or in Operation, repair and maintenance of modern Sophisticated instruments and with five years of teaching experience in the subject.

H.K. Barpujari Endowment Professor : The candidate should be an eminent Scholar in Modern Indian History with published work of high quality and actively engaged in research. The candidate should have at least ten years teaching experience and/or research with experience in guiding research at doctoral level. The candidate should be an outstanding Scholar with established reputation of having made significant contribution in the field of Modern Indian History.

Procedure of Submission of Applications

Applications in prescribed Form mentioned below in 7 (seven) copies together with an application fee of Rs. 20/- (Rupees twenty) and Rs. 10/- (Rupees ten) in case of Scheduled Caste/Scheduled Tribe candidate only by "CROSSED INDIAN POSTAL ORDERS" drawn in favour of the Registrar, Gauhati University payable at Gauhati-781014 post office should be sent in an inner sealed cover superscribed application for post of (Name of the post applied for with Sl. No.) Advt. No. 11 of 1987 enclosed in an outer cover addressed to the Registrar, Gauhati University, Gauhati-14.

Last Date of Receipt of Applications

Applications will be received upto **18-1-1988 only**. Applications received after the last date of submission and not submitted in prescribed form as given below in 7 (seven) copies will not be entertained. Copies of certificates and Marksheets must be attached with each copy of application.

No. of this Advertisement and Name of the Post alongwith the Serial No. of Post must be referred to in the application.

Persons in employment should apply with a 'No Objection Certificate' from the present employer.

Interview

Candidates will be required to appear at an interview if and when called for at their own cost.

Canvassing directly or indirectly will be a disqualification.

REGISTRAR

PRESCRIBED FORM FOR APPLICATIONS

1. Advertisement No. :
2. Serial No. of the Post in the Advertisement :
3. Name of the Post applied for :
4. Name of the applicant in full (in block letters) :
5. Father's Name in full :
6. Home Address in full :
7. Present Address in full :
8. Date of Birth by Christian era :
9. Age on the Date of Application :
10. Nationality :
11. Community (Scheduled Caste/Tribes) :
12. Educational Qualification :

Examination Passed	Name of Board/ University	Year of Passing	Div./ Class	%age of Marks	Rank if any
1	2	3	4	5	6
H.S.L.C.					
H.S./P.U.					
B.A./B.Sc./B.Com./LL B.					
M.A./M.Sc./M.Com./M.B.A./LL.M.					
M. Phil/M. Litt.					
Ph. D./D. Litt.					

Specialisation in M.A., M.Sc., M.Com., Degree :

Title of the Ph.D. Dissertation :

N.B. : Attested copies of Marksheets and Certificates of all examinations passed should be enclosed with all seven copies of applications.

13. Past experience if any (give details) :
14. Research Publications (give details in separate sheets of papers). :
15. Present Occupation if any :
16. Name of Employer, (if employed) :
17. Basic Pay drawn :
18. Name of two referees (not related to the candidate).

I beg to certify that the particulars furnished above are true in all respects. I shall be liable to action at any time if found otherwise.

Signature of the Applicant

Date :————

ARUNACHAL UNIVERSITY

ITANAGAR-791111

Advertisement No. 1/87

Dated the 11th Dec. 1987

Applications on prescribed form are invited from the citizens of India for the following posts :

Sl. No.	Name of Post		Department	No. of Posts	Pay Scale
1.	Professor		Education	1	Rs. 4500-7300/-
2.	Reader	(i)	-do-	2	Rs. 3700-5700/-
		(ii)	Pol. Science	2	-do-
		(iii)	History	2	-do-
3.	Lecturer	(i)	Education	6	Rs. 2200-4000/-
		(ii)	Pol. Science	6	-do-
		(iii)	History	6	-do-
4.	Stenographer (Grade-I)			1	Rs. 2000-60-2300-EB-75.3200/.
5.	Stenographer (Grade-II)			2	Rs. 1400-60-1800-EB-50-2300/-
6.	Tech. Assistant (Library)			1	Rs. 1640-60-2600-EB-75-2900/.
7.	Calligrapher			1	Rs. 1200-30-1560-EB-40-2040/-

Minimum Qualifications

A. Professor : An eminent scholar with published work of high quality actively engaged in research. About ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

B. Reader : Good academic record with 1st or 2nd class (not below 55% or 'B' plus) Postgraduate degree in the subject and a doctoral degree in the subject/equivalent published work with not less than 5 years of teaching/research experience out of which not less than 3 years should be in a cadre not below than that of a lecturer.

C. Lecturer : Consistently good academic record with 1st or 2nd class (not below 55% or 'B' plus) Postgraduate Degree in the subject.

For the posts of Reader and Lecturers in Education persons having M.Ed. degree will be preferred.

D. Stenographer (Grade-I) : A graduate with a minimum speed of 150 w.p.m. A person having working experience of 5 years or more as grade-II stenographer may also apply.

E. Stenographer (Grade-II) : Graduate with minimum speed of 120 w.p.m. Working Grade-III Steno with minimum speed of 120 w.p.m. may also apply.

F. Tech. Assistant (Library) : B.Lib from a recognised University.

G. Calligrapher : A graduate with good hand writing.

Other things being equal Arunachalee Candidates for the posts in Category D,E,F & G will be given preference.

The University reserves the right not to fill up all the posts at a time.

The University reserves the right to negotiate with suitable person or persons, if necessary, who may not have applied formally.

Age : For posts at Sl. No. 5, 6 & 7 maximum age as on **1.1.1988** should be 25 years (relaxable by 5 years in case of ST/SC candidates). For post at Sl. No. 4 maximum age permissible is 35 years.

The posts are temporary at present but likely to continue. Candidates appointed will be provided with rent-free accommodation.

Application Form and Fees : Application should be made on plain paper (six copies) in the format given. Applications for each post of Professor, Reader and Lecturer must be accompanied by an application fee of Rs. 20/- (Rs. 10/- in case of ST/SC candidates). Applications for other posts must be accompanied by an application fee of Rs. 10/- (Rs.5/- in case of ST/SC candidates). The I.P.O. or Bank Draft should be payable to the Registrar, Arunachal University, Itanagar. Applications should be sent under double cover—inner cover should be sealed and Superscribed "Application for the Post of——————" and outer cover should contain the address of the Registrar, Arunachal University, Itanagar-791 111.

Persons in employment should apply through proper channel or attach 'No Objection Certificate' from the employer.

Interview : Candidates may be required to appear at an interview if and when called for at the place to be communicated later.

Last Date : Applications will be received by the undersigned upto **31st January, 1988** only. Application should be accompanied with attested copies of required certificates/Marksheets, fees etc. Incomplete applications will not be entertained.

REGISTRAR

The Format of the Application Form is as given below :

1. Name
2. Date of Birth
3. Father's/Husband's Name
4. Address
5. Name of the post for which applying

6. Educational Qualifications (with the year of passing and percentage of marks/class) (onward from 10+2 or equivalent)
7. Employment with the name of Employers, Remuneration and period.
8. Research experience and List of Publications.
9. Any other experience which fits with the requirements of the job.
10. Professional Memberships and any other distinction.
11. How do you think you are a fit candidate for a Challenging Teaching and Research Position at this University ?
12. No. and Names of the Testimonials attached.
13. Names and Address of two referees who are/were connected with your Academic/Professional work.
14. No., Date and Place of issue of the Postal Order/Bank Draft (Please use additional sheets of paper wherever needed and send copies of one or two Research publications which you consider to be the most important. Application should be neatly typed).

Date :
Place :

Signature of the Applicant

JAMIA MILLIA ISLAMIA

JAMIA NAGAR, NEW DELHI-110025.

Advt. No. 11/1987-88

Applications on the prescribed form which can be had from the Registrar's Office on any working day between 10.00 a.m. and 12.00 Noon or by sending a self-addressed and stamped (Re. 1/-) envelope of 10 x 23 cms. are invited alongwith the crossed Indian Postal Order or Bank Draft of Rs. 5/- for posts carrying a maximum grade upto Rs. 400/- per month and Rs. 7/- for posts carrying a grade exceeding Rs. 400/- per month (Rs. 2/- for SC/ST candidates irrespective of grades) for the following posts so as to reach the Registrar by 1.00 p.m. on **12.01.1988.**

Ability to teach in Hindustani, particularly Urdu is a desirable qualification for teaching posts and adequate knowledge of Urdu and Hindi is essential for non-teaching posts.

D.A., C.C.A., H.R.A. P.F., Gratuity, Pension and other benefits will be given as per Jamia rules.

Relaxation in any of the qualifications may be made on the recommendation of the Selection Committee in exceptional cases.

1. One Professor in Urdu (Rs. 1500-2500 unrevised).

An eminent scholar with published work of high quality and actively engaged in research. About ten years' experience of teaching and/or research. Experience of Guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

2. Two Readers in Education (Rs. 1200-1900 unrevised), one in Science Education and one in Education temporary but likely to be made permanent.

Good academic record with a Doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of Teaching/Research.

3. One Reader in Special Education (Rs. 1200-1900 unrevised).

(a) A good academic record with a Doctoral degree or equivalent published work. Specialization in one of the two areas of education of the visually handicapped or of the orthopaedically handicapped. Evidence of being actively engaged in (i) research (ii) innovation in teaching methods or (iii) production of teaching materials in the area of the education of the visually handicapped or orthopaedically handicapped.

(b) About 5 years' experience of teaching and/or research work provided that at least three of these years were as Lecturer or in an equivalent position in any one of the above areas.

(c) Preference will be given to candidates with a postgraduate degree in Psychology.

4. One Assistant Director (Rs. 1200-1900 unrevised), Centre of Adult & Continuing Education & Extension.

(a) Essential

(i) Good Academic record in the subject of Adult/Continuing/Community / Extension Education/ Community Development from a recognized Indian University or an equivalent degree from a foreign university.

(ii) M. Phil. or Ph. D. in a subject related to adult learning or a Ph.D. in a subject under social sciences or Education/Evidence of published learning materials and learning resources on areas listed in (i) above or published research in any of the relevant area/s indicated above.

OR

(i) Good academic record in the subject of Social Science/Social Work / Humanities / Education/ Sciences/Home Science.

(ii) Post Master's diploma in Adult & Continuing Education from a recognised Indian University or an equivalent diploma/degree from a foreign university.

(iii) M. Phil. or Ph. D. in a subject related to adult learning or a Ph. D. in a subject under social sciences or Education or Evidence of published learning materials and learning resources in adult/continuing/community/ extension education/community development or published research in any of these area/s.

Explanation—For determining 'good academic record' the following criteria shall be adopted.

(i) A candidate holding a Ph. D./ M. Phil. degree should possess atleast a second class Master's degree; or

(ii) A candidate without a Ph. D. degree should possess a high second class Master's degree and second class in the Bachelor's degree; or

(iii) A candidate not possessing Ph.D. degree but possessing second class Master's degree should have obtained first class in the Bachelor's degree.

(b) About five years experience of field work/teaching or research in a subject having bearing on Adult / Continuing / Extension/ Community/Non-Formal Education or Community Development. This condition may be relaxed on the recommendation of the Selection Committee.

In case a suitable candidate is not available who meets the prescribed qualifications or a qualified candidate is not found suitable by the Selection Committee the condition of Post Master's diploma and M. Phil./Ph. D. or published learning materials or published research in the subject as stated in the qualifications be relaxed on the condition that the candidate selected fulfils the conditions prescribed within the next 8 years from the date of appointment, otherwise the increment will cease at the stage where the incumbent is at that point of time.

5. One Lecturer in Physics (Rs. 700-1600 unrevised).

(a) A Doctor's degree or research work of an equally high standard; and

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in the relevant subject from an Indian University or an equivalent degree from a foreign University. Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organization on the condition that he will have to obtain a Doctor's Degree or give evidence of research of high standard within eight years of his appointment failing which he will not be able to earn future increment until he fulfils these requirements.

Desirable

Acquaintance with Operating Systems (Unix or some other commonly used operating system) and experience in the area of Computational Physics.

6. One Lecturer in Special Education (Rs. 700-1600 unrevised).

(a) A Doctorate in Education or in relevant subject or research work of an equally high standard.

(b) Good academic record with at least second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign university.

(c) Specialization in one of the areas of the education of the visually handicapped or of orthopaedically handicapped.

(d) Preference will be given to candidates with a post-graduate degree in Psychology.

7. One Lecturer in Electrical Engineering (Rs. 700-1300 unrevised), Polytechnic.

(1) Degree in Electronics/Electrical Engineering.

(2) Two years teaching/industrial experience.

8. One Lecturer in Electronics (Rs. 700-1300 unrevised), Polytechnic, temporary but likely to be made permanent.

(1) First Class Bachelor's degree in Electronics or Electrical Engineering with specialization in Electronics or equivalent.

(2) 5 years of industrial experience in production, design or maintenance and/or teaching experience.

9. One Archivist (Rs. 1100-1600 unrevised).

Essential :

(a) Master's Degree in Modern/ Medieval Indian History of a recognised University, at least in the second class or an equivalent qualification,

(b) A Doctor's degree or research work of an equally high standard,

(c) Post-graduate diploma in Archival Science from the National Archives of India or an equivalent qualification,

(d) At least five years' experience in a Central/State/University Archives,

(e) Knowledge of Arabic/Persian.

10. One Executive Engineer (Rs. 1100-1600 unrevised).

Qualifications

Graduate in Civil Engineering from a recognised University.

At least 10 years experience in R.C.C. design, cost estimation and in designing constructing and maintaining buildings, roads and utility services like water supply, sanitary gas and electric installations and sewage system.

Must have atleast 7 years' administrative experience in responsible posts, should be conversant with contract law and P.W.D. accounting procedure.

Desirable

Possessing good working knowledge of Electrical Engineering.

Capable of handling electric motors pumps, fluorescent tube lights, window type air-conditioners, electric geysers and coal field hot water supply system.

11. Section Officer/Accountant (Rs. 2000-3500 revised).

Section Officer

(1) A Second Class Graduate.

(2) 8 years experience in a post of Assistant or equivalent in an office of repute.

(3) Proficiency in noting and drafting in Urdu & English.

Desirable

Knowledge of Hindi.

Accountant

(1) A Second Class B. Com. Degree with at least 8 years experience in a post of Asstt. in Accounts Office in a University/Office of repute.

(2) Knowledge of Urdu.

Desirable

Knowledge of Hindi.

12. One Store Purchase Officer (Rs. 2000-3200 revised).

Senior Seconary School Certificate with 10 years experience as Store Supervisor or Graduate with 5 years experience.

Experience

7 years experience as Store Purchase Officer in a repute Govt. concern, Central Stores, C.P.W.D., Warehousing Corporation etc.

Age : 45 years. Relaxable for employed persons.

13. One Public Relation Officer (Rs. 2000-3200 revised).

Essential : Graduate.

Experience : Five years experience on the Editorial side of a newspaper or five years experience of Puplic Relations or Liasion work in Government organisation or public or private undertaking of requte.

Age : 35 years. Relaxable for five years for employees of government, public undertakings, autonomous body.

14. One Sr. Technical Asstt. (Rs. 1640-2900 revised).

M.A./M.Sc./M.S.W. with specialization/knowledge in research, statistics mathematical calculation etc. or B.A./B.Sc./B.S.W. with five years experience in research, statistics or must have worked as Junior Technical Assistant for not less than five years in the concerned organization like C.S.O., Registrar General Office etc.

15. One Sports Coach (Rs. 1400-2600 revised).

Certificate from National Institute of Sports, Patiala or from other recognised physical education institutions.

16. Personal Assistant (Rs· 1400-2600 revised).

Higher Secondary with a minimum speed of 40 w.p.m. in English typing and 120 w.p.m. in shorthand in English. Knowledge of Urdu.

Desirable

(1) Graduate with previous experience of noting and drafting in English.

(2) Knowledge of Hindi.

17. One Sr. Lab. Assistant (Rs. 1320-2040 revised), Psychology Lab.

Graduate with five years experience of working in Psychology Laboratory.

18. Stenographer Grade-II (English) (Rs. 1200-2040 revised).

Matriculate with proficiency in typing with a speed of about 35 w.p.m. and proficiency in Shorthand with a speed of about 80 w.p.m.

19. One Medical Store Keeper (Rs. 1200-2040 revised).

Essential : Diploma in Pharmacy from a recognised institution or experience as Medical Store Keeper for five years in a reputed concern.

Knowledge of Urdu.

Age : 35 years. Relaxable in case of exceptionally qualified and experienced persons.

20. One Draughtsman (Rs. 1200-2040 revised).

Essential

Matric and Diploma in Draftsmanship.

Knowledge of Urdu.

Desirable

(1) Good handwriting & capacity to do neat free hand lettering.

(2) Competence to use Water colours and coloured crayon pencil.

21. One Sanitary Inspector (Rs. 1200-2040 revised).

Essential

Should be Matriculate.

Qualified Sanitary Inspector from any Govt. recognized Institute and experience of 3 years as a Sanitary Supervisor in a Ist class local body after obtaining Sanitary Inspector's qualifications. Knowledge of Urdu.

22. One Land Record Keeper (Rs. 1200-2040 revised).

Essential: Intermediate with five years experience as Land Record Clerk in a Tehsil or subdivision office. Knowledge of Urdu.

Age : 30 years. Relaxable in case of exceptionally qualified and experienced persons, or those already in service of revenue department of Government.

23. One Patwari (Rs. 1200-2040 revised).

Matriculation with experience of revenue/land record/Patwari in a Tehsil or Revenue Office for three years.

Age : Same as for Land Record Clerk above.

24. One Security Supervisor (Rs. 1200-2040 revised).

Essential : Matriculation/Higher Secondary/Senior School Certificate. Knowledge of Urdu.

Should have served in Police/Army/Navy/Airforce/Military organisation not below the rank of Dewan, Head Constable, Havaldar or equal rank.

Age : 45 years. Relaxable for ex-servicemen/retired Policemen.

25. One Tracer (Rs. 950-1500 revised).

Essential : Matriculation with Diploma in Draftsmanship from a recognised Institution. Knowledge of Urdu. One year experience.

Age : 25 years. Relaxable in case of exceptional qualifications and experience.

NOTE :

(1) Candidates who have already applied for the posts of Reader in Special Education (Advt. No. 5/1986-87) ; Archivist (Advt. Nos. 7/85-86 & 5/86-87); Executive Engineer (Advt. No. 5/87-88) ; Store Purchase Officer, Medical Store Keeper, Draughtsman, Sanitary Inspector, Land Record Clerk, Patwari, Security Supervisor and Tracer (Advt. No. 2/83-84) ; Section Officer (Advt. No.7/85-86) need not apply again. They may, however, submit the additional information, if any, to the undersigned stating the post, applied for, before the last date mentioned above.

(2) 12.5% non-teaching posts shall be filled from amongst members of the Scheduled Castes and 5% from amongst the members of the Scheduled Tribes.

(3) The number of vacancies given in the advertisement above are liable to be changed without notice by the Jamia.

Khwaja M. Shahid
REGISTRAR

UNIVERSITY OF KALYANI

KALYANI, WEST BENGAL
PIN-741235

Advertisement No. 6/87

Dated : 14-12-87

Applications are invited for the post of Finance Officer on pay and allowances as admissible under the rules of this University.

Name of Post : Finance Officer—One post.

Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500/-.

Qualifications : Essential—(i) Bachelor's Degree with good academic record. (ii) Chartered Accountant or Cost Accountant or equivalent professional qualification. Or Master's Degree in Business Administration with specialisation in finance. (iii) Seven years of working experience in Management of Finance in a Government/University/Commercial Establishment. (iv) Age not less than 40 years relaxable in case of exceptionally qualified candidates.

The principle of reservation of posts for candidates belonging to scheduled castes and scheduled tribes shall be followed to the extent possible as per orders issued by the State Govt. from time to time.

Applications must be submitted in the prescribed form which may be obtained from the office of the undersigned from 21.12.87 to 11.1.88 personally or by sending self-addressed stamped (Rs. 1.80) envelope (25 c.m. x 12 c.m.) on payment of Rs. 7.50 (one-fourth for scheduled castes and scheduled tribes candidates) by Crossed Indian Postal Order in favour of the 'University of Kalyani'. Persons already in employment should apply through proper channel. Applications should be submitted in envelopes superscribed with the name of the post applied for along with attested copies of certificate, marksheets in respect of all the examinations passed and reprints of publications/books and the same must reach the office of the undersigned on or before 11.1.88.

The scheduled castes and tribes candidates must produce copies of caste certificate from the appropriate authority (S.D.O.) in their own area at the time of collecting forms.

Forms will be distributed between 11.30 a.m. and 3 p.m. on full working days (Saturday upto 1 p.m.). Candidates called up for interview will have to appear for the same at their own cost.

Those who applied in response to our previous advertisements need not apply again, their applications would be considered according to the above qualifications as relaxed by the Government.

P. Sircar
REGISTRAR

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THE UNIVERSITY OF JODHPUR
(Establishment Section)

Advertisement No. 123/87-88

Dated : 10.12.1987

APPOINTMENTS

Applications are invited on the prescribed form for the following temporary posts under **A.V.R.C.** Scheme so as to reach the office of the undersigned latest by **Jan. 12, 1988**. The application forms can be obtained from this office on payment of Rs. 10/- for teaching and non-teaching posts only through IPO payable to the Registrar, University of Jodhpur at Jodhpur alongwith a self addressed envelope of 24 x 11 cms. size bearing postal stamps of Rs. 5.90.

The Audio Visual Research Centre Project in the University is enaged in producing Educational T.V. films to the telecast on the UGC slot under "Country-wide Class Room." The AVRC is supposed to produce required number of programmes per month for this UGC slot. This is essentially an operational and applicationable venture requiring field duties. The staff should be of expected competence and is required to work long hours with devotion and dedication.

Teaching Posts

1. Programme Officer/Co-ordinator —One

Pay Scale : Rs. 1200-50-1300-60-1900 (UGC Grade)

Qualification

(i) A degree of recognised University in Ist Class in any branch of communication-film, T.V. Journalism etc.

(ii) A Post-graduate Diploma or Cetificate in the area of Film-Direction/TV Production/Journalism etc.

(iii) 10 years' experience in TV Production and also experience in Training TV Production Prasaran of 3 years' (both will be concurrent).

OR

(i) A Master's degree in High Second Class.

(ii) 10 years' experience in teaching at College/University level.

(iii) 3 years' experience of managing or direction a T.V. unit or a film Society/Experience in Script writing for Radio, film and TV (both experience could be concurrent).

(iv) Broad interest in various fields of media.

Age : Upto 45 years

2. Producer : One
Rs. 700-40-1100-50-1600 (UGC Grade)

Qualification

Degree or Diploma of a recognised Institute in Cinematography OR Direction OR in Developmental Communication OR Degree atleast Second Class of a recognised university OR equivalent qualification and 3 years' experience of direction on Television/film production.

3. Assistant Engineer : One
Rs. 700-40-1100-50-1600 (UGC Grade)

Qualification

B.E. (Electronics) OR M.Sc (Physics) with Electronics from a recognised university/Institution OR equivalent with two years experience in the field of T.V. Broadcasting.

4. Research Scientist 'A'—One
Rs. 700-40-1100-50-1600 (UGC Grade)

Qualification

Outstanding academic/research career preferably with Post-graduate in Social Science subject (Sociology, Social Anthropology, Communication Research & Studies, Psychology, Management etc.) Research Methodology followed by a Ph.D. degree. Research experience of not less than two years after the award of Ph.D. degree.

Non-Teaching Posts

1. Additional Cameraman —One
Rs. 1400-30-1640-40-2000-50-2300-60-2600-75-2825-(State) with a starting Salary of Rs. 1490/-

Qualification

Diploma/Degree in Cinematography OR equivalent qualification from a recognised Institute.

2. Technical Assistant —One
Rs. 1400-30-1640-40-2000-50-2300-60-2600-75-2825 (State)

Qualification

Diploma in Electronics with two years experience or ITI certificates with 7 years experience in trade concerned or equivalent.

3. Technician (Electronics) —One
Rs. 880-15-1000-20-1200-25-1400-30-1640-40-1680 (State)

Qualification

Diploma/Certificate in Electronics or equivalent from a recognised Institute/University with three years experience in the related field OR SSC (old) with 10 years experience in the related field. (we are looking for an excellent technician who has good experience in the repairs of Colour TV sets, VCRs, Monitors etc.)

4. Technician —One
Rs. 880-15-1000-20-1200-25-1400-30-1600-40-1680 (State)

Qualification

Diploma in Mechanical Trade from a recognised Institute with three years experience in the related field OR SSC (old) with 10 years experience as General Technician.

(We are looking for an artisan/craftsman/Tradesman who is imaginative and who can make intricate models, designs, studio sets etc.)

Note

1. Dearness Allowance, House Rent Allowance, City Compensatory Allowance, etc. and PF will be payable as per University rules.

2. The University reserves the right not to fill the post if deemed necessary.

3. No application form in any case will be accepted after the last date mentioned above.

4. Candidate should affix pass-port size photo (latest) on the application form.

5. The qualifications and experience may be relaxed for candidates otherwise found suitable by the Selection Committee. Project and the posts may continue beyond 31st March, 1990.

6. Candidates should remit the following prescribed application fee

UNIVERSITY NEWS, MONDAY, DECEMBER 28, 1987 Regd. No. R.N. 7180/63 Post Regd. D(C) 1086

through Indian Postal Order along with application form (In persuance of Syndicate Res. No. 147/86 dated 23/24 May 1986).

(a) (i) Application fee for the post of Teachers and Officers Rs. 10/-

(ii) Application fee for the other posts Rs. 5/-

(b) (i) Application fees for SC/ST candidates in case of Teaching posts/officer posts Rs. 2.25/-

(ii) Application fees for SC/ST candidates for other posts Rs. 1. 25/-

H.K.L. Khattar
REGISTRAR

REGIONAL ENGINEERING COLLEGE

WARANGAL-506004 (AP)

Advertisement No. 3/1987

Applications are invited for the post of Principal, Regional Engineering College, Warangal in the scale of Rs. 2250-125/2-2500-EB-125/2-2750 (likely to be revised). The Regional Engineering College, Warangal is an autonomous body funded by the Central Government and the Government of Andhra Pradesh. Applicants should possess the following qualifications and experience :

Essential : 1. First class (or equivalent) Master's/Doctorate Degree in Engineering and Technology or a Doctorate in Applied Sciences.

2. Atleast 15 years experience in two or more of the following fields.

(a) Teaching at an institution of University standard.

(b) Research in a recognised institution or organisation.

(c) Industry including Government departments in a Senior Executive position.

(d) Planning and administration of technical education.

It is essential that atleast five years of experience should be in teaching in an Engineering institution of University standard.

Desirable : 1. Professional/Scientific/Research work of outstanding merit.

2. Experience in curriculum development, administration and planning of technical institution at degree and post-graduate level.

3. Published work of high standard.

4. Membership of Professional bodies.

Filled-in applications should be sent by Registered post addressed to the Chairman, Board of Governors, Regional Engineering College, Warangal-506004 in triplicate in the prescribed form that can be had from the Office of the Principal, Regional Engineering College, Warangal-506004 (AP) by sending Indian Postal Order for Rs. 2.00 in favour of the Principal, Regional Engineering College, Warangal-506004 payable at Regional Engineering College, Warangal-506004 Post Office. Applications should be accompanied by a crossed Indian Postal Order of Rs. 7.50 ps. in favour of the Principal, Regional Engineering College, Warangal-506004. The Board of Governors of the College may sanction advanced increments in the scale of pay applicable to the post, depending upon the qualifications and experience of the selected candidates. The last date for receipt of filled-in applications is **30th January, 1988.**

PRINCIPAL

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY-76

P.O. IIT, POWAI, BOMBAY-400 076

Advertisement No. C-168/87

Applications are invited for the following post in the prescribed form obtainable from the Registrar, Indian Institute of Technology, P.O. IIT, Powai, Bombay-400 076 on request accompanied by self-addressed envelope (23 cm x 10 cm) on or before 5th January, 1988. Persons employed in Government/Semi-Government Organisations or Educational Institutions must apply through proper channel. Completed applications together with the requisite copies of certificates and crossed postal order for Rs. 7.50 as application fee should be sent to the Registrar on or before 20th January, 1988 (No application fee need be sent by SC ST candidates). Candidates called for interview will be paid first class rail fare from the place of their residence to Bombay and back by the shortest route. Relaxation of standard for SC/ST candidates exists as per Govt. of India rules.

Post : DEPUTY REGISTRAR (MATERIAL MANAGEMENT)—(One)

Scale of Pay : Rs. 1200-50-1300-60-1900. Total gross emoluments on the minimum of scale is Rs. 3075/- approx. (Scale likely to be revised after implementation of the recommendations of the Fourth Pay Commission).

Job Description

The Deputy Registrar (Material Management) works under the control of Registrar and is responsible for all matters pertaining to the procurement of equipment, consumables, instruments, furniture and fixtures (both indigenous and from abroad). The job requires familiarity with rules and regulations relating to stores purchase, stores accounting, stores verification etc. and government procedures for importing items from abroad.

Qualifications

1. A good Bachelor's degree in Arts, Science and Commerce, Engineering or Technology of a recognised University.

2. A post-graduate degree or diploma in any of the above fields or in Public Administration/Material Management of a recognised Institute/University or its equivalent; or recognised qualifications as Chartered/Cost/SAS Accountant.

Experience

A minimum of 10 years of relevant administrative experience preferably in a Government, Educational or Research Institute or in a Commercial Organisation of a national standing. Out of this, atleast 5 years should be in a responsible position. The candidates would be expected to have some familiarity with academic activities and working procedures in higher educational institutions. In case of necessity, the incumbents may be required to hold additional or exclusive charge of any other area.

Desirable

1. Teaching and Research experience or experience of life on a residential educational campus.

2. Experience of computer systems for information, processing and retrieval.

REGISTRAR

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New Delhi-110002. Grams : ASINDU. Phones : 3315105, 3313390, 3312305, 3310059 and 3312429 Telex 31 5578 AIU IN
Printed by Navchetan Press (P) Ltd. at Navjeevan Printers, 1-E/2, Jhandewalan Extension, New Delhi-110055. Tel. 529157